CFD-V30

SERVICE MANUAL

US Model
Canadian Model

Model Name Using Similar Mechanism	CD Section	NEW
	Tape Section	NEW
Optical Pick-up Type		KSM-213CAM/C1NP
Tape Transport Mechanism Type		MF-V10-117

SPECIFICATIONS

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION

With 2 8-ohm loads, both channels driven from 150 - 10,000 Hz, rated 2 W per channel-minimum RMS power, with no more than 10 % total harmonic distortion in AC operation.

Other Specifications

CD player section

System
Compact disc digital audio system
Laser diode properties
Material GaAlAs
Wave length 780 nm
Emission duration. Continuous
Laser output Less than 44 6 µW
(This output is the value measured at a distance of about 200 mm from the objective lens surface on the optical pick-up block with 7 mm aperture)
Spindle speed
200 r/min (rpm) to 500 r/min (rpm) (CLV)
Number of channels
2
Frequency response
20 - 20,000 Hz +1/-2 dB
Wow and flutter
Below measurable limit

Radio section

Frequency range
FM 87 6 – 108 MHz
AM 530 – 1,710 kHz
Aerials
FM Telescopic aerial
AM Built-in ferrite bar aerial

Cassette-corder section

Recording system
4-track 2 channel stereo
Fast winding time
Approx 120 s (sec) with Sony cassette C-60
Frequency response
TYPE I (normal) 70 - 10,000 Hz

General

Speaker
Full range 10 cm dia , 2 8ohms, cone type (2)
Outputs
Headphones jack (stereo minijack)
For 16 - 64 ohms impedance headphones
Power output (excluding US model)
2 5 W + 2 5 W (at 2 8 ohms, 10 % harmonic distortion)
Power requirements
For CD radio cassette-corder
120 V AC, 60 Hz
9 V DC, 6 size D (R20) batteries
For remote controller
3 V DC, 2 size AA (R6) batteries
Power consumption
AC 20 W

Battery life
For CD radio cassette-corder

FM recording	
Sony R20P approx	13 5 h
Sony alkaline LR20 approx	20 h
Tape playback	
Sony R20P approx	7 5 h
Sony alkaline LR20 approx	15 h
CD playback	
Sony R20P approx	2 5 h
Sony alkaline LR20 approx	7 h

Dimensions
Approx 425× 160× 246 mm (w/h/d)
(16 ¾×6 ⅜×9 ¾ inches) (incl projecting parts)
Mass
Approx 4 0 kg (8 lb 13 oz) (incl batteries)
Supplied accessory
AC power cord (1)
Remote controller (1)

Design and specifications are subject to change without notice

CD RADIO CASSETTE -CORDER

MICROFILM

992313611

SONY®

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CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1
SERVICING NOTES

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer :
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5mA (500 microampers).
Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

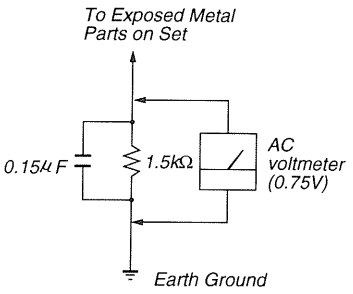


Fig. A. Using an AC voltmeter to check AC leakage.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

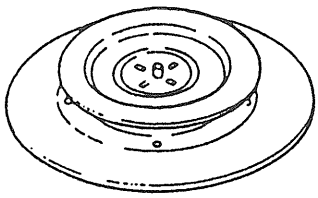
NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 30 cm away from the objective lens.

CHUCK PLATE JIG ON REPAIRING

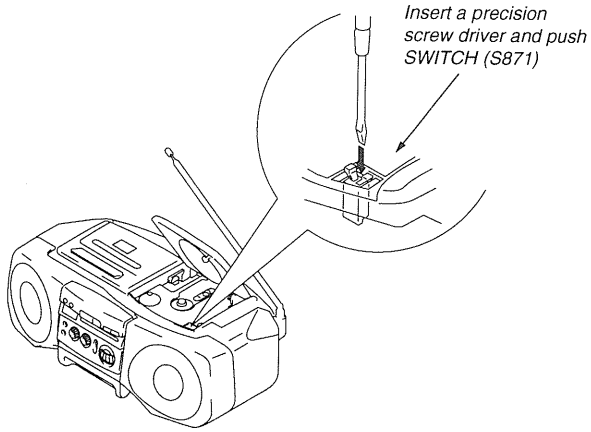
On repairing CD section, playing a disc without the CD lid, use Chuck Plate Jig.

- Code number of Chuck Plate Jig : X-4918-255-1



LASER DIODE AND FOCUS SEARCH OPERATION CHECK

1. Press CD open knob.
2. Open the lid for CD.
3. Push on SWITCH (S871) as following figure.
4. Confirm the laser diode emission while observing the objecting lens. When there is no emission, Auto Power Control circuit or Optical Pick-up is broken.
   Objective lens moves up and down once for the focus search.

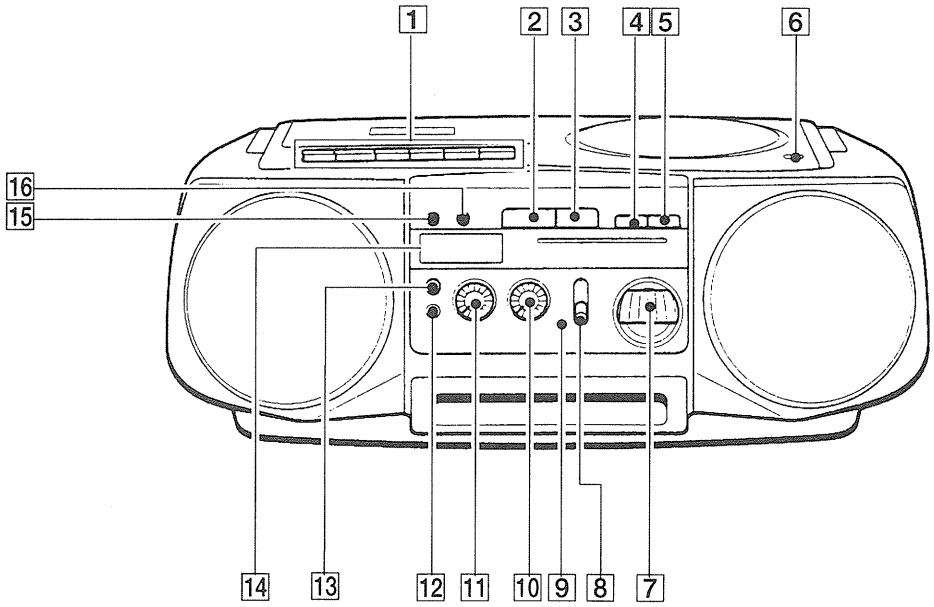


SECTION 2
GENERAL

This section is extracted from instruction manual.

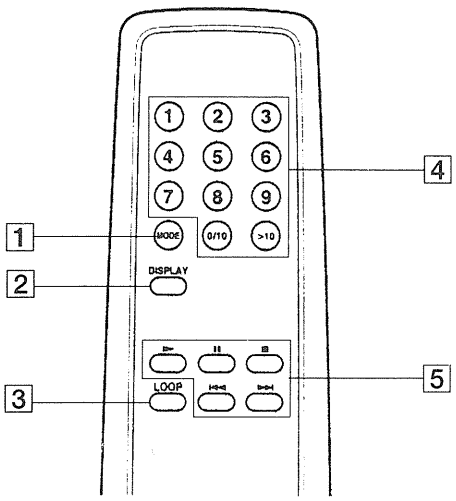
LOCATION AND FUNCTION OF CONTROLS

Main unit



1 Tape operation buttons
2 ►II button
3 ■ button
4 I◄◄ button
5 ►►I button
6 OPEN / CLOSE button
7 TUNE knob
8 FUNCTION switch
9 OPR / BATT indicator
10 TONE knob
11 VOL knob
12 ∩ Phones jack
13 MEGA BASS switch
14 Information display
15 PLAY MODE button
16 DISPLAY, ENTER button

Remote controller



1 MODE button
2 DISPLAY button
3 LOOP button
4 Numeric buttons
5 CD operation buttons

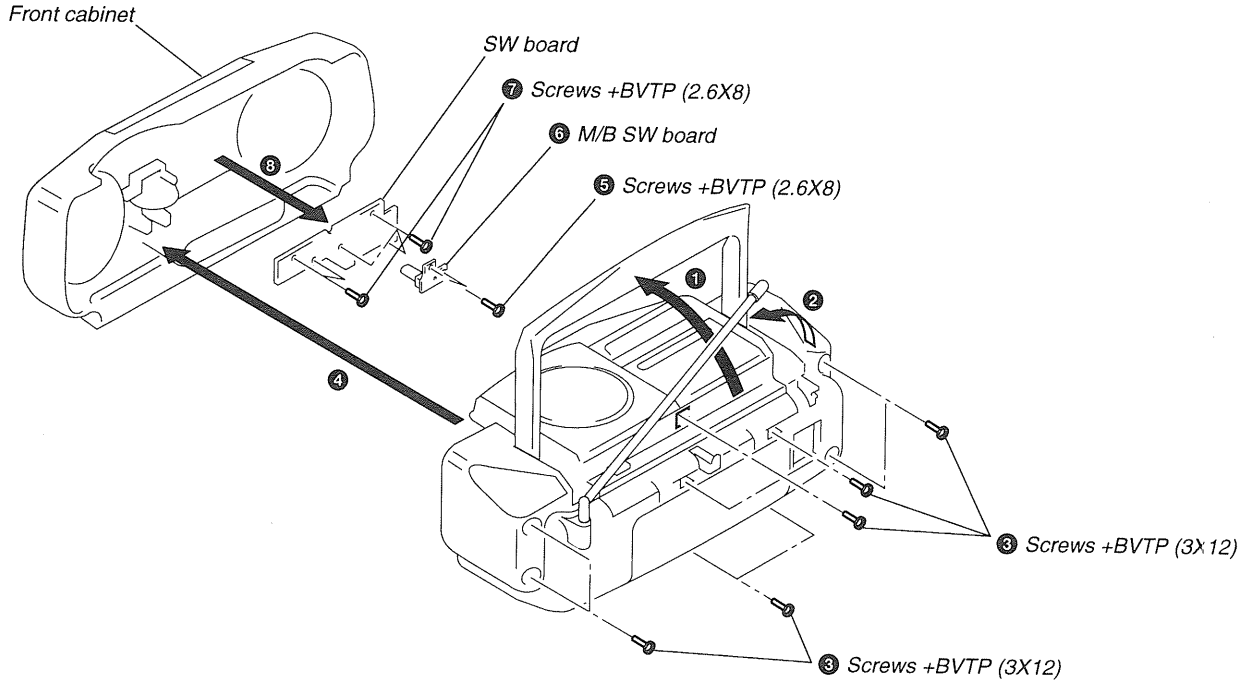
SECTION 3
DISASSEMBLY

● The equipment can be removed using the following procedure.

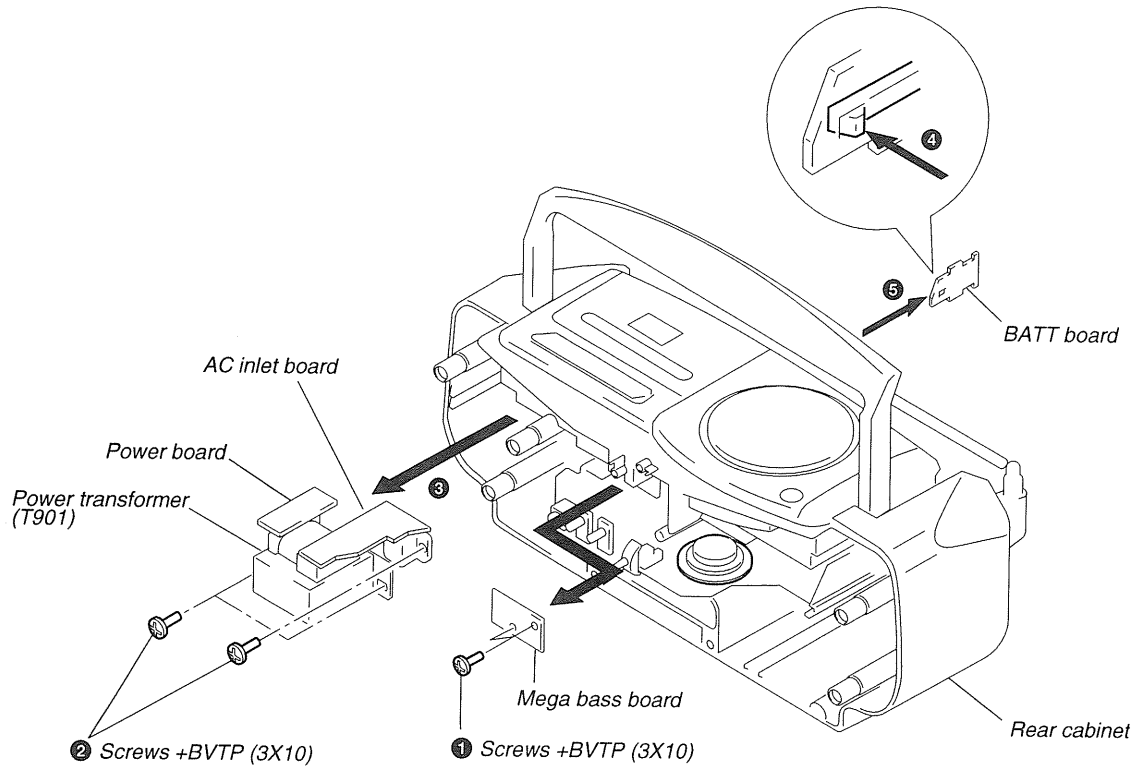
Set → Front cabinet → M/B SW board → SW board
Front cabinet → Mega bass board
Front cabinet → AC inlet board, Power board → BATT board
Front cabinet → Upper cabinet → Optical pick-up section → Main board
Upper cabinet → Mechanism deck → REC SW board

Note : Follow the disassembly procedure in the numerical order given.

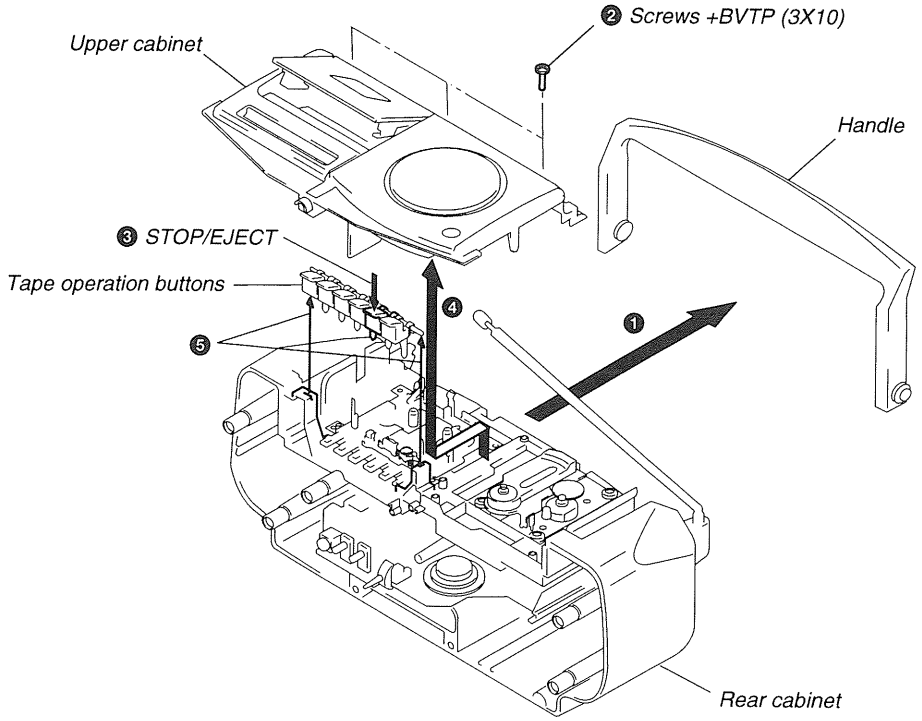
3-1. FRONT CABINET, M/B SW BOARD, SW BOARD REMOVAL



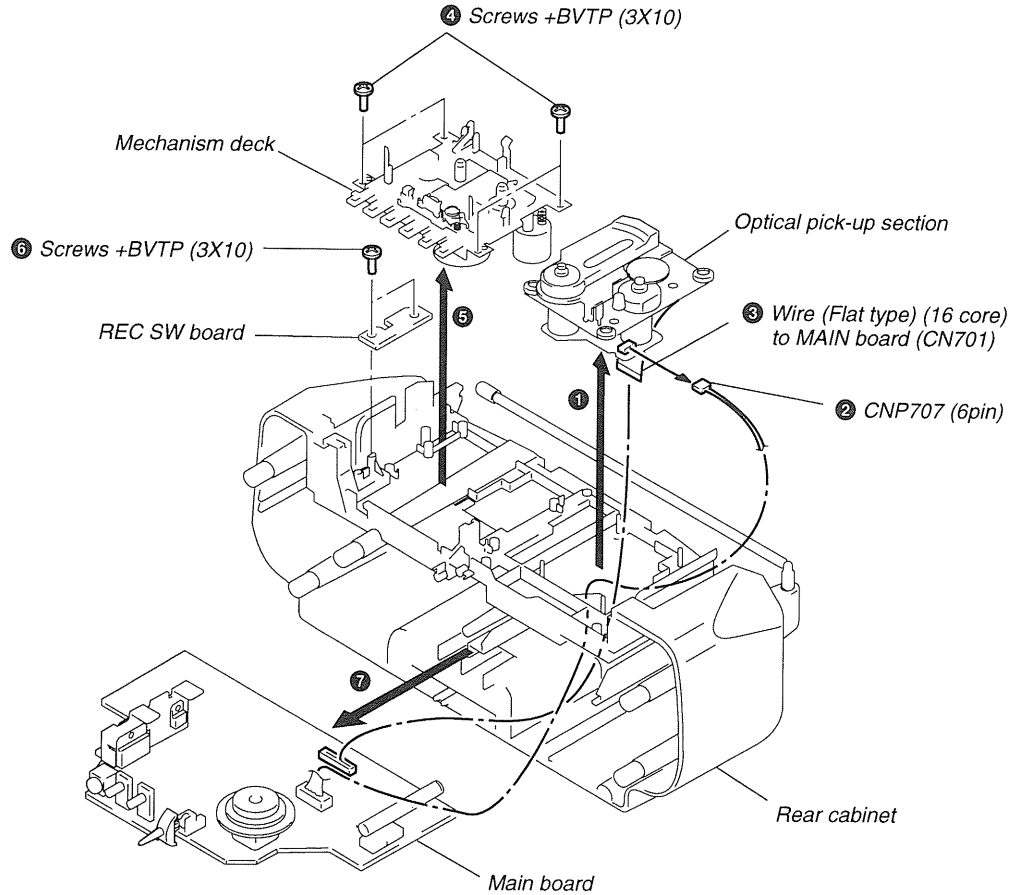
3-2. MEGA BASS BOARD, POWER BOARD, AC INLET BOARD, BATT BOARD REMOVAL



3-3. UPPER CABINET REMOVAL



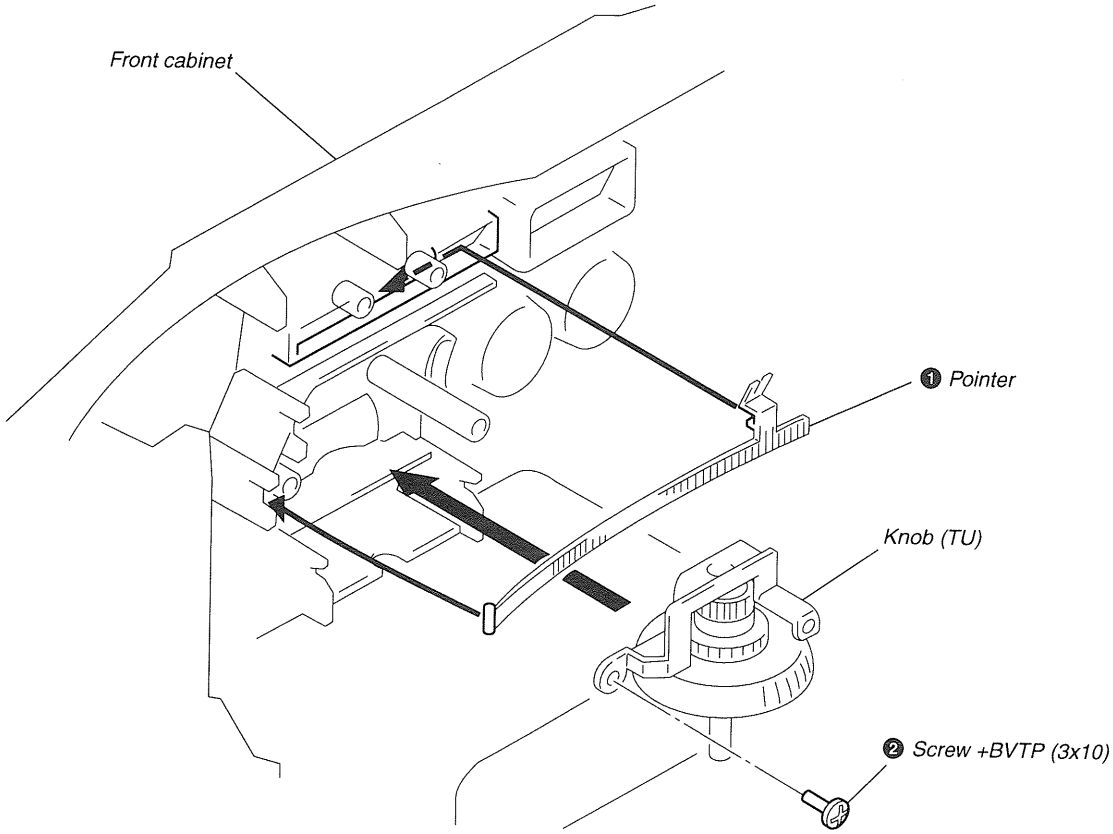
3-4. OPTICAL PICK-UP SECTION, MECHANISM DECK, MAIN BOARD REMOVAL



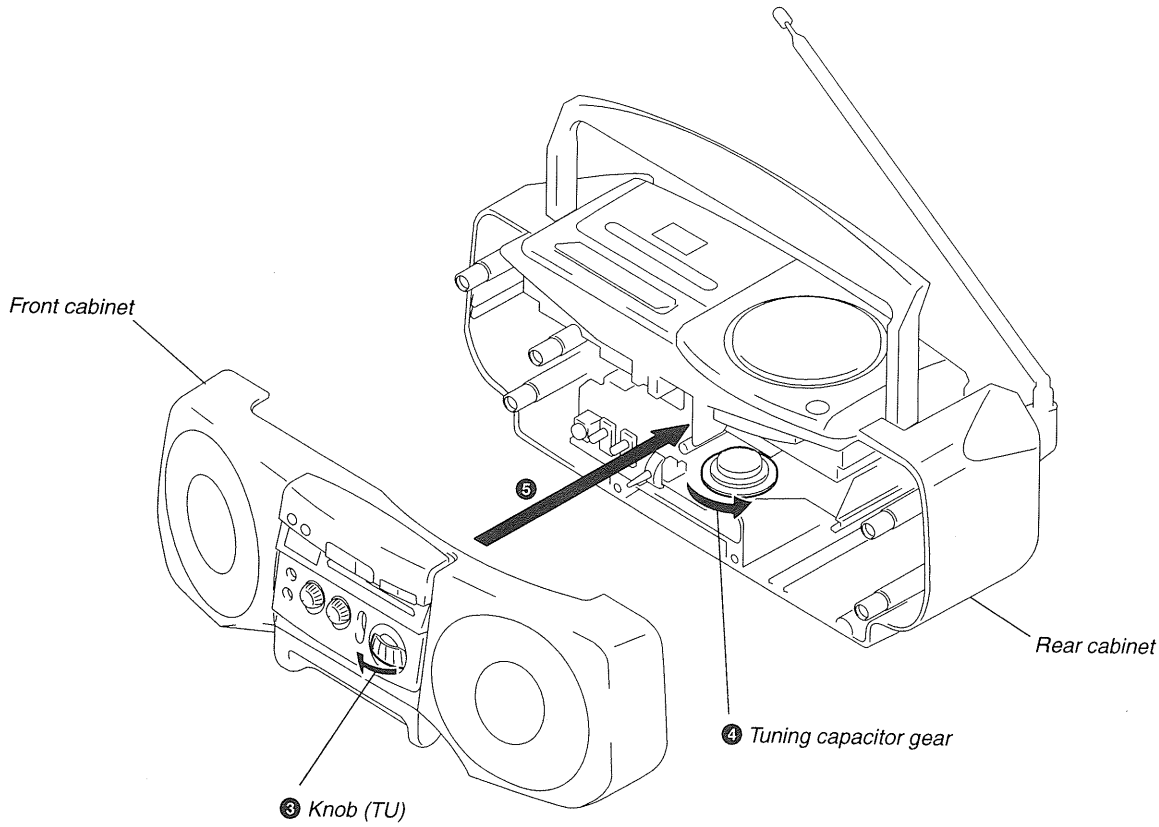
SECTION 4
DIAL POINTER INSTALLATION

Note : Follow the installation procedure in the numerical order given.

① Align the pointer with the groove of front cabinet and insert it as shown in the illustration.
② Align knob (TU) with front cabinet and fasten the screw.



③ Turn the knob (TU) fully in the direction of the allow as shown in the illustration.
④ Turn the tuning capacitor gear fully in the direction of the allow as shown in the illustration.
⑤ Fasten the front cabinet and rear cabinet with the screws.



SECTION 5
ADJUSTMENTS

5-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab :
   record/playback head, erase head, capstan, pinch roller, rubber belts
2. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Torque	Torque Meter	Meter Reading
Forward	CQ-102C	30 – 70 g•cm (0.42 – 0.97 oz•inch)
Forward Back Tension	CQ-102C	1.5 – 5.5 g•cm (0.020 – 0.076 oz•inch)
Fast Forward	CQ-201B	more than 60 g•cm (more than 0.84 oz•inch)
Rewind	CQ-201B	more than 60 g•cm (more than 0.84 oz•inch)

Tape Tension Measurement

Torque Meter	Meter Reading
CQ-403A	more than 100g (more than 3.53 oz)

5-2. ELECTRICAL ADJUSTMENTS

TAPE RECORDER SECTION

Standard Output Level

Output terminal	HP OUT
load impedance	32Ω
output signal level	0.25V (–10dB)

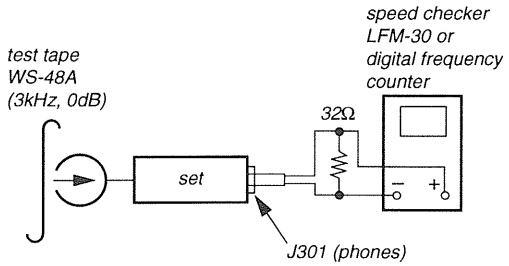
Test Tape

Type	Signal	Used for
WS-48A	3kHz, 0dB	Tape Speed Adjustment
P-4-A063	6.3kHz, –10dB	Head Azimuth Adjustment

Tape Speed Adjustment

Procedure :

Mode : Playback

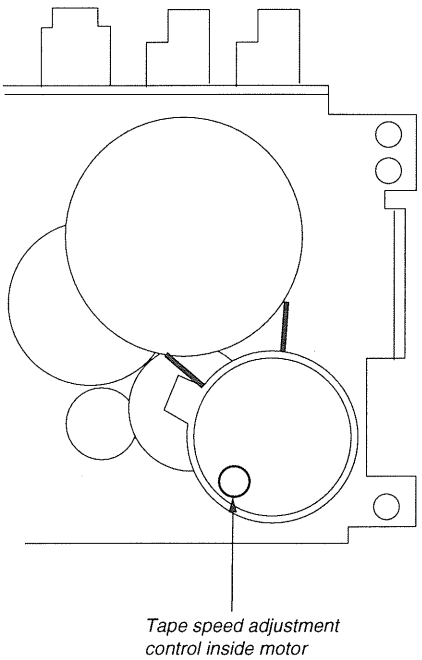


Adjustment Value :

Speed checker	Digital frequency counter
–1 to +1%	2,970 – 3,030Hz

Frequency difference between the beginning and the end of the tape should be within 1.5% (45Hz).

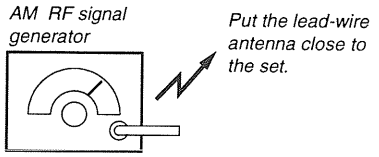
Adjustment Location :



TUNER SECTION

AM Section

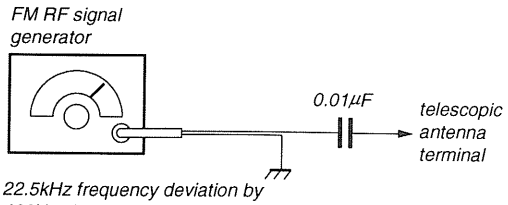
Function switch : AM
Volume : MIN



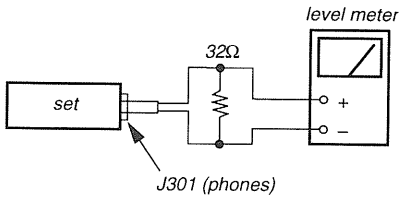
30% amplitude modulation by 400Hz signal.
Output level : as low as possible

FM Section

Function switch : FM
Volume : MIN



22.5kHz frequency deviation by 400Hz signal.
Output level : as low as possible



● Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

AM IF ALIGNMENT	
Adjust for a maximum reading on level meter.	
T2	455kHz

AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L4	520kHz
CT4	1,780kHz

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L3	620kHz
CT3	1,400kHz

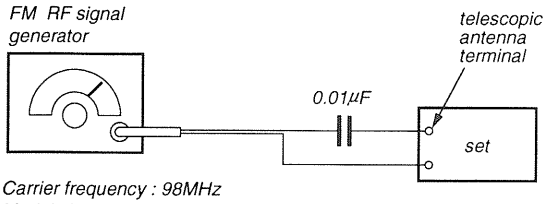
FM IF ALIGNMENT	
Adjust for a maximum reading on level meter.	
T1	10.7MHz

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L2	86.5MHz
CT2	109.5MHz

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L1	86.5MHz
CT1	109.5MHz

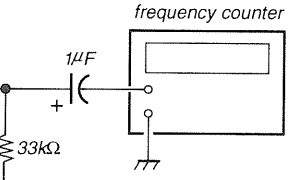
VCO Adjustment

Procedure :

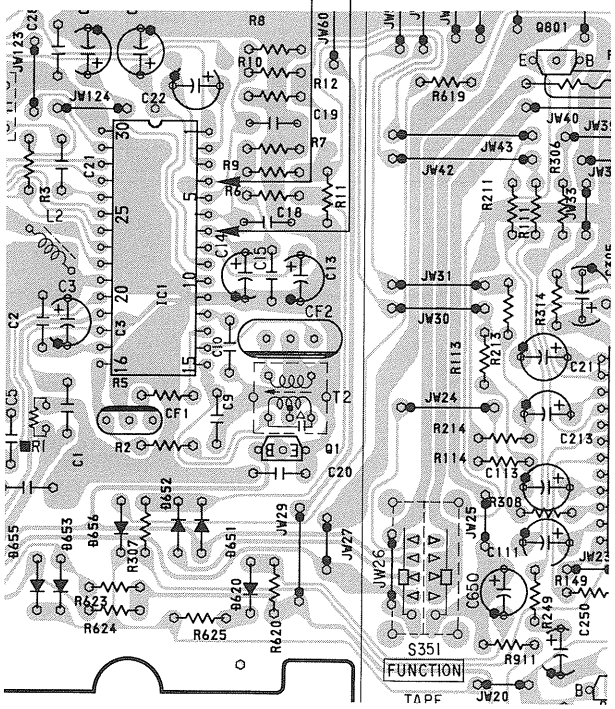


Carrier frequency : 98MHz
Modulation : No modulation
Output level : 1.38mV (–55dB)

1. Connect the frequency counter to ④ and ⑦ pin of IC 1 as shown the figure below.
2. Turn the set to 98MHz.
3. Adjust RV1 for 76kHz±500Hz reading frequency counter.



[MAIN BOARD]



CD SECTION

Note on Adjustment

1. Perform adjustment in test mode.
   After adjustment, be sure to release test mode.
2. Perform adjustments in the order given.
3. Use the disc (YEDS-18. Part No. 3-702-101-01) only when so indicated.

Before adjustment

Put the set into test mode and perform the following checks. Repair if there are any problems.

● Sled Motor Check

1. Press ▶II button, then press OFF button.
2. Press ▶▶I, I◀◀ buttons and confirm that the Optical pick-up moves smoothly from the innermost to outermost circumference and back smoothly and with no catching or abnormal noises. (Cancellation of BTL mute)
   ▶▶I : Optical pick-up moves to the outer circumference
   I◀◀ : Optical pick-up moves to the inner circumference

● Focus Search Check

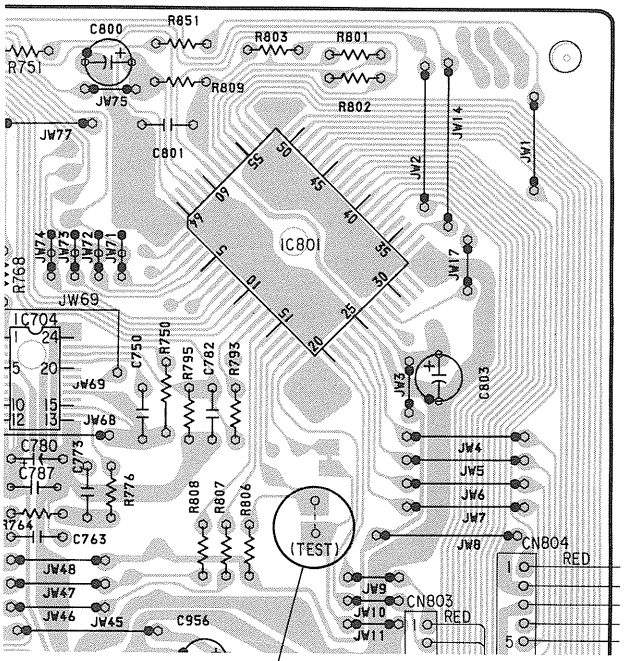
1. Press ▶II button. (Focus search operation is performed continuously.)
2. Look at the Optical pick-up objective lens and confirm that it moves up and down smoothly, with no catching or abnormal noises.
3. Press ■ button.
   Confirm that focus search operation stops. If it does not , press ■ button again longer.

Note : When the malfunction is occurred by mis-passing other buttons, turn off the power and check again from making the test mode.

How to put the Set into Test Mod

1. Short-circuit following portion (IC801 ⑯ pin) on the MAIN board.
2. Turn the POWER ON.
3. Open the short-circuit to release test mode.

[MAIN BOARD]



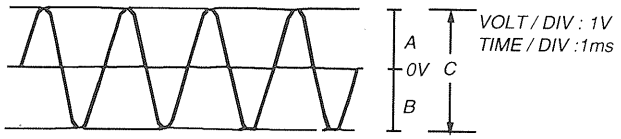
TEST MODE terminal

E-F Balance Adjustment

This adjustment is to be done when the optical pick-up block is replaced.

Adjustment Procedure :

1. Connect the oscilloscope to test point TP (VC) and TP (TEO) on MAIN board.
2. Put the set into test mode.
3. optical pick-up setting to the center by ▶▶I or I◀◀ button pushing.
4. Insert disc (YEDS-18) and press ▶II button.
5. Adjust RV703 so that the oscilloscope traveres waveform is symmetrical, as shown in the figure below.
6. Release test mode after adjustment is completed.



A = B C = 300mV ± 120mV

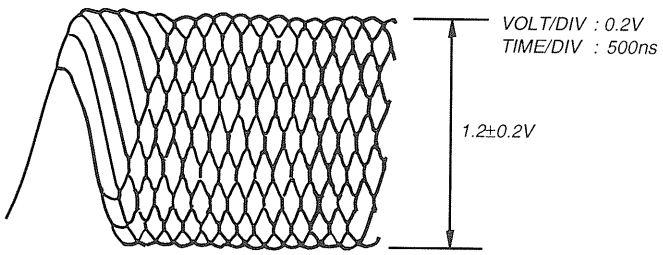
Focus Bias Adjustment

This adjustment is to be done when the optical pick-up block is replaced.

Adjustment procedure :

1. Connect the oscilloscope to test point TP (VC) and TP (RFO) on MAIN board.
2. Put the set into test mode.
3. Optical pick-up setting to the center by ▶▶I or I◀◀ button pushing.
4. Insert disc (YEDS-18) and press ▶II button.
5. Press the ▶II button. (Tracking servo ON)
6. Adjust RV701 so that the oscilloscope waveform is as shown in the figure below (eye pattern).
   A good eye pattern means that the diamond shape (◊) in the center of the waveform can be clearly distinguished.
7. Release test mode after adjustment is completed.

● RF signal reference waveform (eye pattern)



When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensitivity.

Focus/Tracking Gain Adjustment

A frequency responce analyzer is necessary in order to perform this adjustment exactly.
However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.
Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.
However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

Symptoms \ Gain	Focus	Tracking
● The time until music starts becomes longer for STOP → ▶II button or automatic selection. (I◀◀, ▶▶I buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
● Music does not start and disc continues to rotate for STOP →▶II button or automatic selection. (I◀◀, ▶▶I buttons pressed.)	–	low
● Sound is interrupted during PLAY. Or time counter display stops progressing.	–	low
● More noise during 2-axis device operation.	high	high

The following is a simple adjustment method.

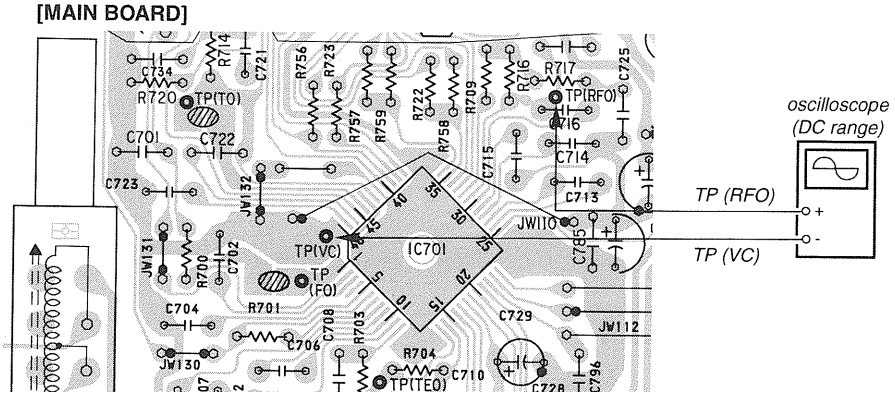
– Primary Adjustment –

Note : Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment.If the positions after the primary adjustment are only a little different, return the controls to the original position.

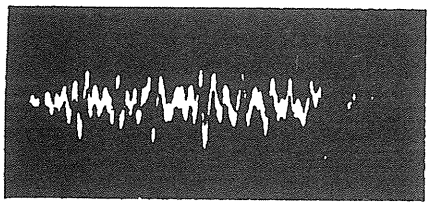
Procedure :

1. Keep the set horizontal.
   If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2-axis device.
2. Insert disc (YEDS-18) and press ▶II button.
3. Connect oscilloscope to TP(FO) and TP (VC) on MAIN board.
4. Adjustment RV702 on MAIN board so that the waveform is as shown in the figure below. (Focus gain adjustment)

[MAIN BOARD]



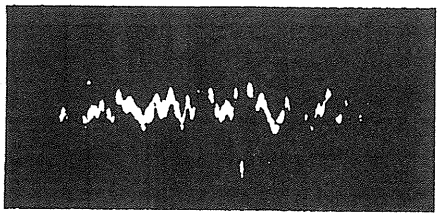
VOLT / DIV : 100mV
TIME / DIV : 2ms



● Incorrect Examples (DC level changes more than on adjusted waveform)

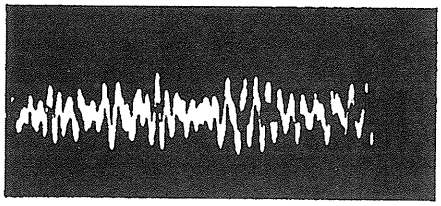
low focus gain

VOLT / DIV : 100mV
TIME / DIV : 2ms

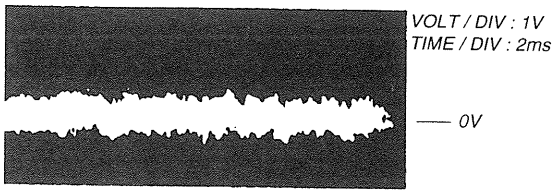


high focus gain

VOLT / DIV : 100mV
TIME / DIV : 2ms

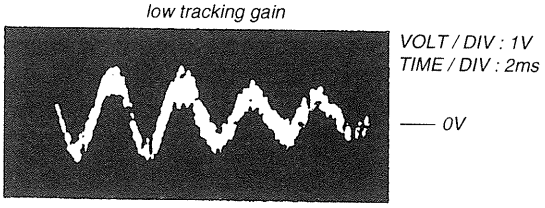


5. Connect oscilloscope to TP(TO) and TP(VC) on MAIN board.
6. Adjust RV704 on MAIN board so that the waveform is as shown in the figure below. (Tracking gain adjustment)

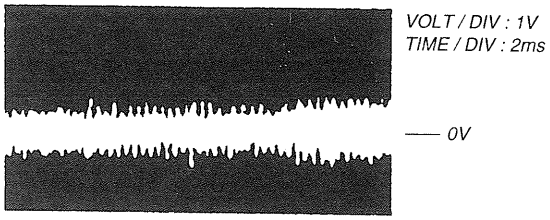


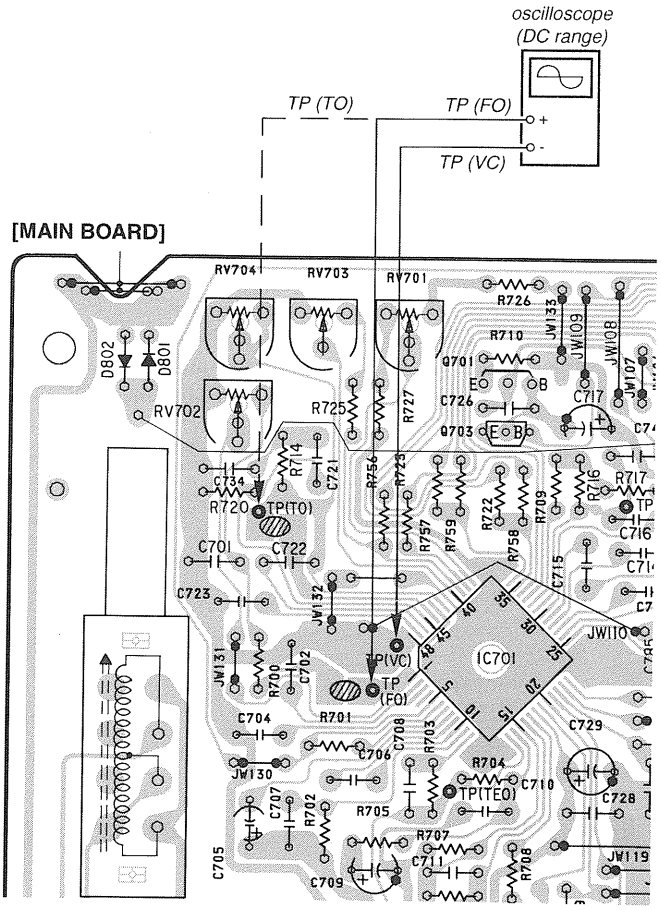
● Incorrect Examples (fundamental wave appears)

low tracking gain

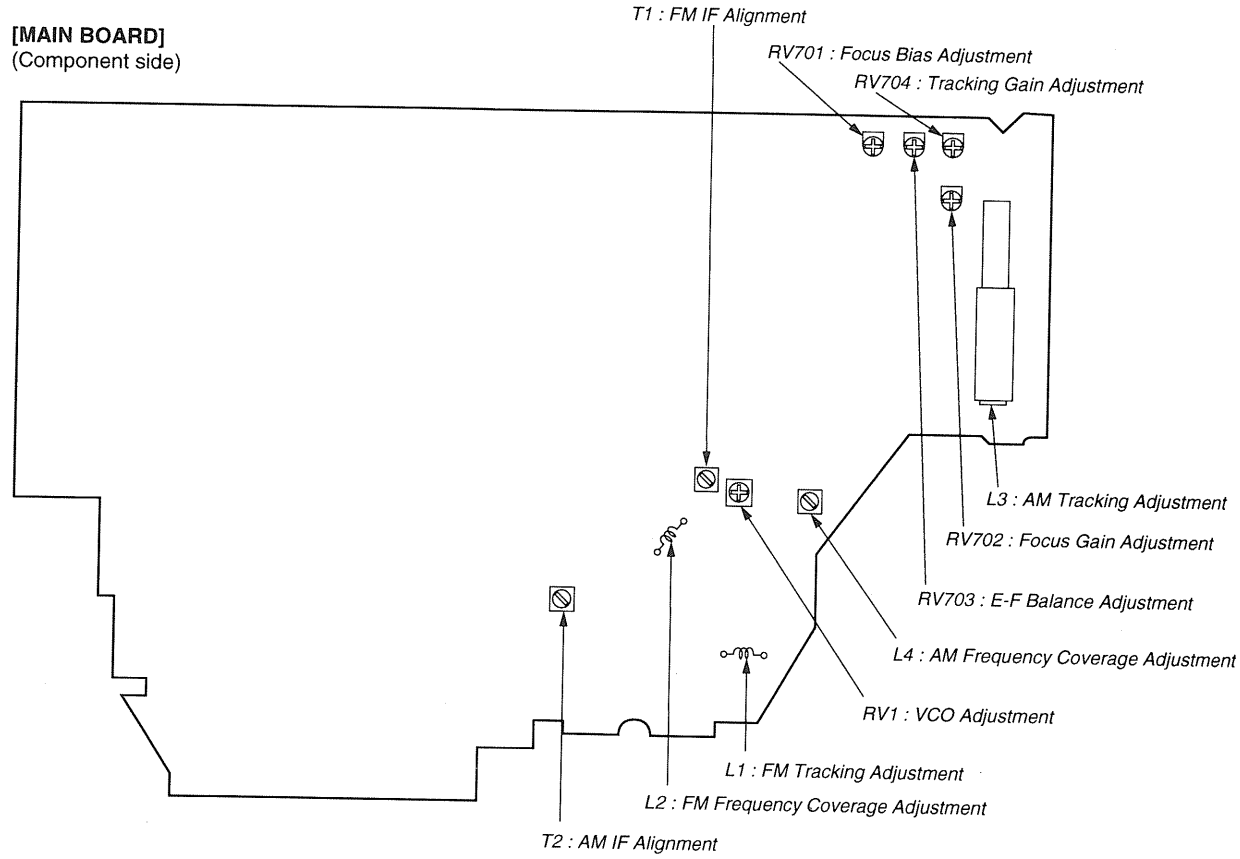


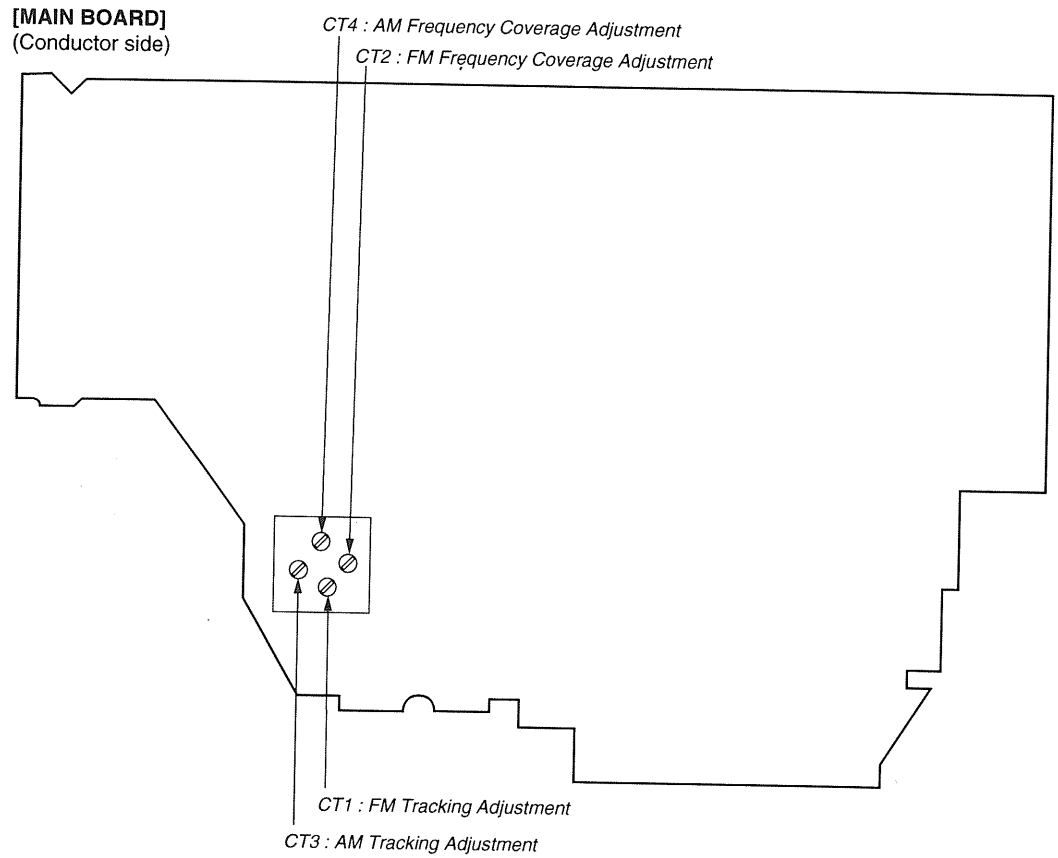
high tracking gain
(high fandametial wave than for low gain)





Adjustment Location : MAIN board (Component side)


[MAIN BOARD]
(Component side)
T1 : FM IF Alignment
RV701 : Focus Bias Adjustment
RV704 : Tracking Gain Adjustment
L3 : AM Tracking Adjustment
RV702 : Focus Gain Adjustment
RV703 : E-F Balance Adjustment
L4 : AM Frequency Coverage Adjustment
RV1 : VCO Adjustment
L1 : FM Tracking Adjustment
L2 : FM Frequency Coverage Adjustment
T2 : AM IF Alignment


[MAIN BOARD]
(Conductor side)
CT4 : AM Frequency Coverage Adjustment
CT2 : FM Frequency Coverage Adjustment
CT1 : FM Tracking Adjustment
CT3 : AM Tracking Adjustment

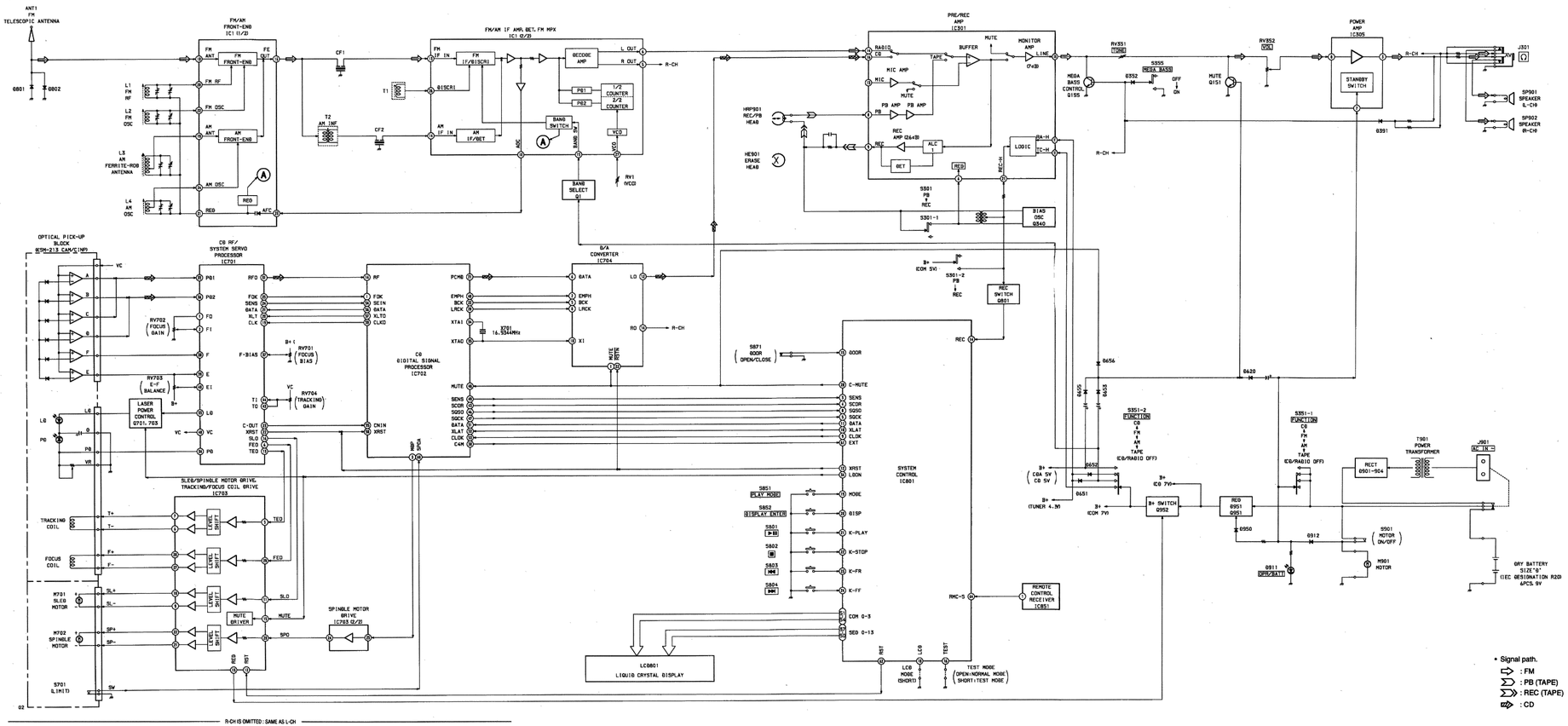
SECTION 6
EXPLANATION OF IC TERMINALS

IC801 CXP5086H-684Q (SYSTEM CONTROL)

Pin No.	Pin name	I/O	Description
1 – 2	NC	–	Not used (Open).
3	SENS	I	CD SENC input.
4	SCOR	I	CD SCOR input.
5	SQCK	O	CD SQCK output.
6 – 7	NC	–	Not used (Open).
8	SQSO	I	CD SUBQ input.
9	CLOCK	O	Clock output for CD DSP command.
10	XLAT	O	CD system lutch output.
11	DATA	O	CD DSP command data output.
12	XRST	O	CD system reset output.
13	GND	–	Ground terminal.
14	REC	I	Function REC input.
15	DOOR	I	CD door open/close input.
16	TEST	I	Test terminal. H : Normal mode, L : Test mode
17	NC	–	Not used (Open).
18	LCD	–	Not used (Connect to ground).
19	MODE	I	PLAY MODE key input
20	DISP	I	DISPLAY/ENTER key input.
21	K-PLAY	I	PLAY key input.
22	K-STOP	I	STOP key input.
23	K-FR	I	⏮ key input.
24	K-FF	I	⏭ key input.
25	GND	–	Ground terminal.
26	VDD	–	Power supply terminal (+5V).
27	NC	–	Not used (Open).
28	C-MUTE	O	Mute signal output.
29 – 33	NC	–	Not used (Open).
34	LDON	O	Laser diode ON/OFF control.
35	NC	–	Not used (Open).
36 – 50	SEG 0 – 14	O	LCD segment output.
51 – 54	COM 0 – 3	O	LCD common output.
55	VLC1	–	LCD controller driver bias power supply.
56	VLC2	–	LCD controller driver bias power supply.
57	VLC3	–	LCD controller driver bias power supply.
58	VDD	–	Power supply terminal (+5V).
59	VL	–	Not used (Connect to ⑤⑦ pin).
60	NC	–	Not used (Open).
61	EXT	I	Clock input from digital signal processor.
62	RST	I	Reset terminal.
63	GND	–	Ground terminal.
64	RMC-S	I	Remote control signal input .

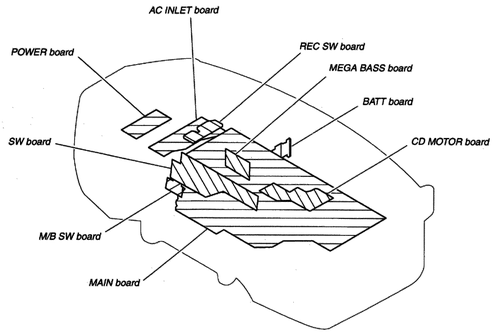
SECTION 7
DIAGRAMS

7-1. BLOCK DIAGRAM


ANT1 FM TELESCOPIC ANTENNA
FM/AM FRONT-END IC1 (1/2)
FM/AM IF AMP, DET, FM MPX IC1 (2/2)
PRE/REC AMP IC301
POWER AMP IC505
OPTICAL PICK-UP BLOCK
CD RF/ SYSTEM SERVO PROCESSOR IC701
D/A CONVERTER IC704
CD DIGITAL SIGNAL PROCESSOR IC702
SYSTEM CONTROL IC801
SLED/SPINDLE MOTOR DRIVE, TRACKING/FOCUS COIL DRIVE IC703
SPINDLE MOTOR DRIVE IC703 (2/2)
LCD801 LIQUID CRYSTAL DISPLAY
REMOTE CONTROL RECEIVER IC851
POWER TRANSFORMER T901
R-CH IS OMITTED : SAME AS L-CH

- Signal path.
  - ⇨ : FM
  - ⇨ : PB (TAPE)
  - ⇨ : REC (TAPE)
  - ⇨ : CD

● CIRCUIT BOARDS LOCATION

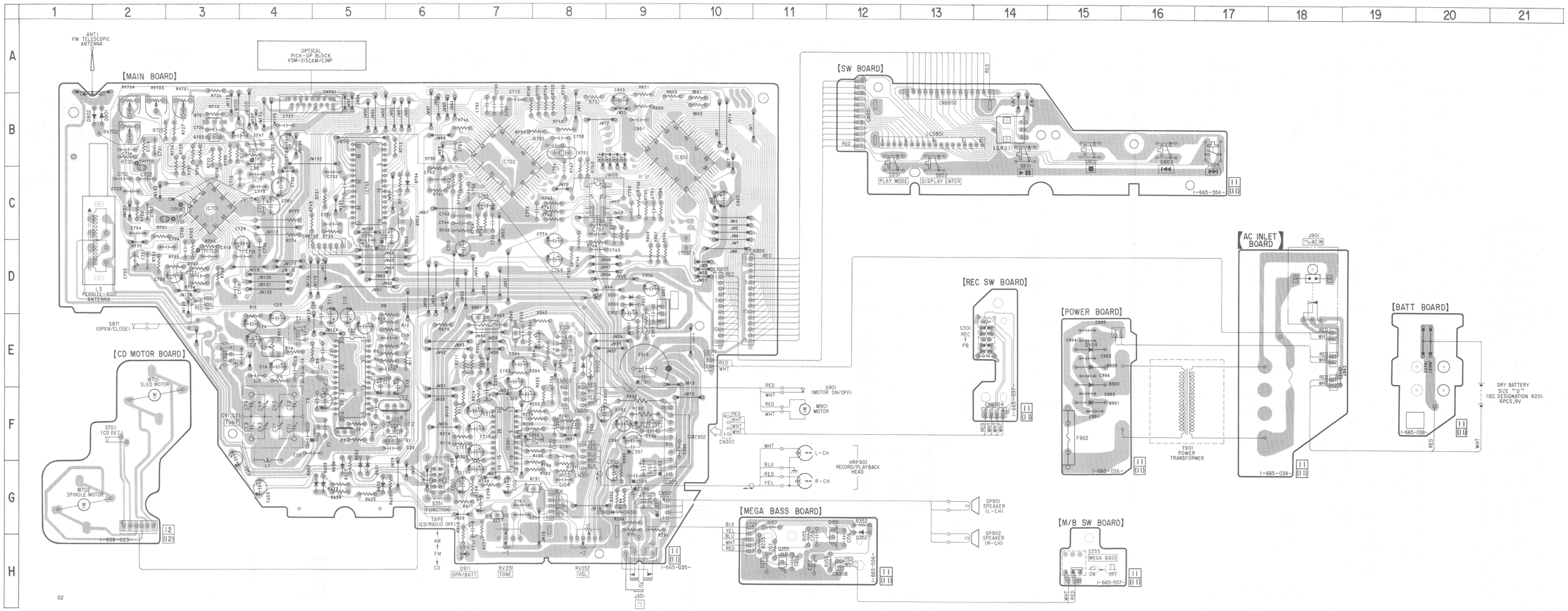


7-2. PRINTED WIRING BOARDS

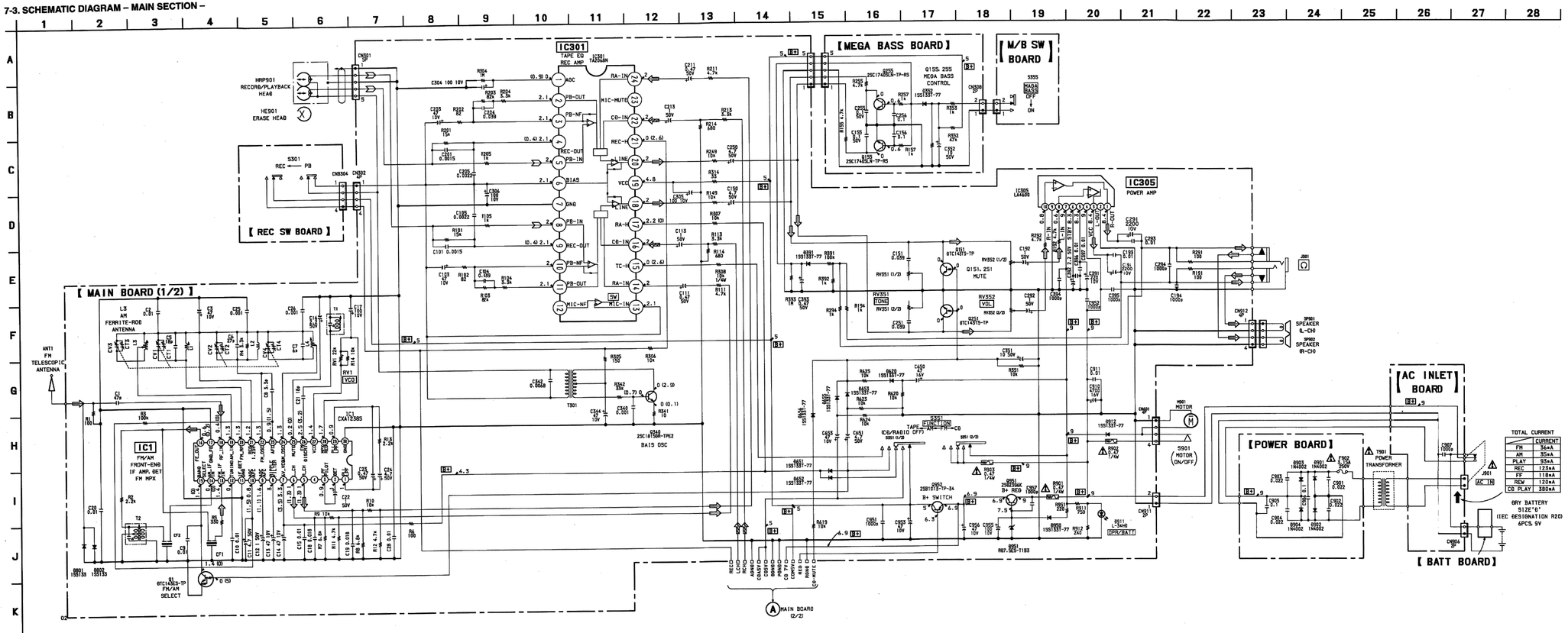
• SEMICONDUCTOR LOCATION

Ref. No.	Location
D352	G-12
D391	G-9
D620	G-5
D651	G-5
D652	G-5
D653	G-5
D655	G-5
D656	G-5
D704	C-6
D801	B-2
D802	B-2
D901	F-15
D902	E-15
D903	E-15
D904	E-15
D911	H-7
D912	E-8
D950	D-9
D951	D-9
IC1	E-5
IC301	F-7
IC305	F-9
IC701	C-3
IC702	B-7
IC703	C-5
IC704	C-8
IC801	B-9
IC851	B-14
Q1	F-6
Q151	G-8
Q155	H-12
Q251	G-7
Q255	H-11
Q340	E-7
Q701	B-3
Q703	B-3
Q801	E-7
Q951	D-9
Q952	C-6

Note:
- ○— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ▒▒ : Pattern on the side which is seen.

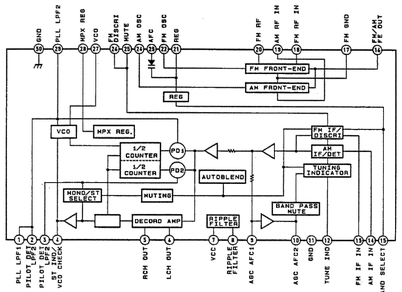


7-3. SCHEMATIC DIAGRAM – MAIN SECTION –


【MAIN BOARD (1/2)】
【REC SW BOARD】
【MEGA BASS BOARD】
【M/B SW BOARD】
【POWER BOARD】
【AC INLET BOARD】
【BATT BOARD】
IC301
TAPE EQ
REC AMP
IC305
POWER AMP
IC1
FM/AM FRONT-END IF AMP, DET FM MPX
IC1 CXA1238S
TOTAL CURRENT
FM 56mA
AM 35mA
PLAY 93mA
REC 125mA
FF 118mA
REW 120mA
CD PLAY 380mA
Note :
• All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
• All resistors are in Ω and ¼W or less unless otherwise specified.
• △ : internal component.
• : fusible resistor.
Note : The components identified by mark △ or dotted line with mark △are critical for safety. Replace only with part number specified.
Note : Les composants identifiés par une marque △sont critiques pour la sécurité. Ne les remplacez que par une pièce portant le numéro spécifié.
• B+ : B+ Line
• : adjustment for repair.
• Power voltage is dc 9V and fed with regulated dc power supply from battery terminal.
• Voltage are dc with respect to ground under no-signal (detuned) conditions.
no mark : FM (Radio section), CD STOP (CD section), PLAY (Tape section)
( ) : AM (Radio section), REC (Tape section)
• Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
• Signal path.
: FM
: PB
: CD

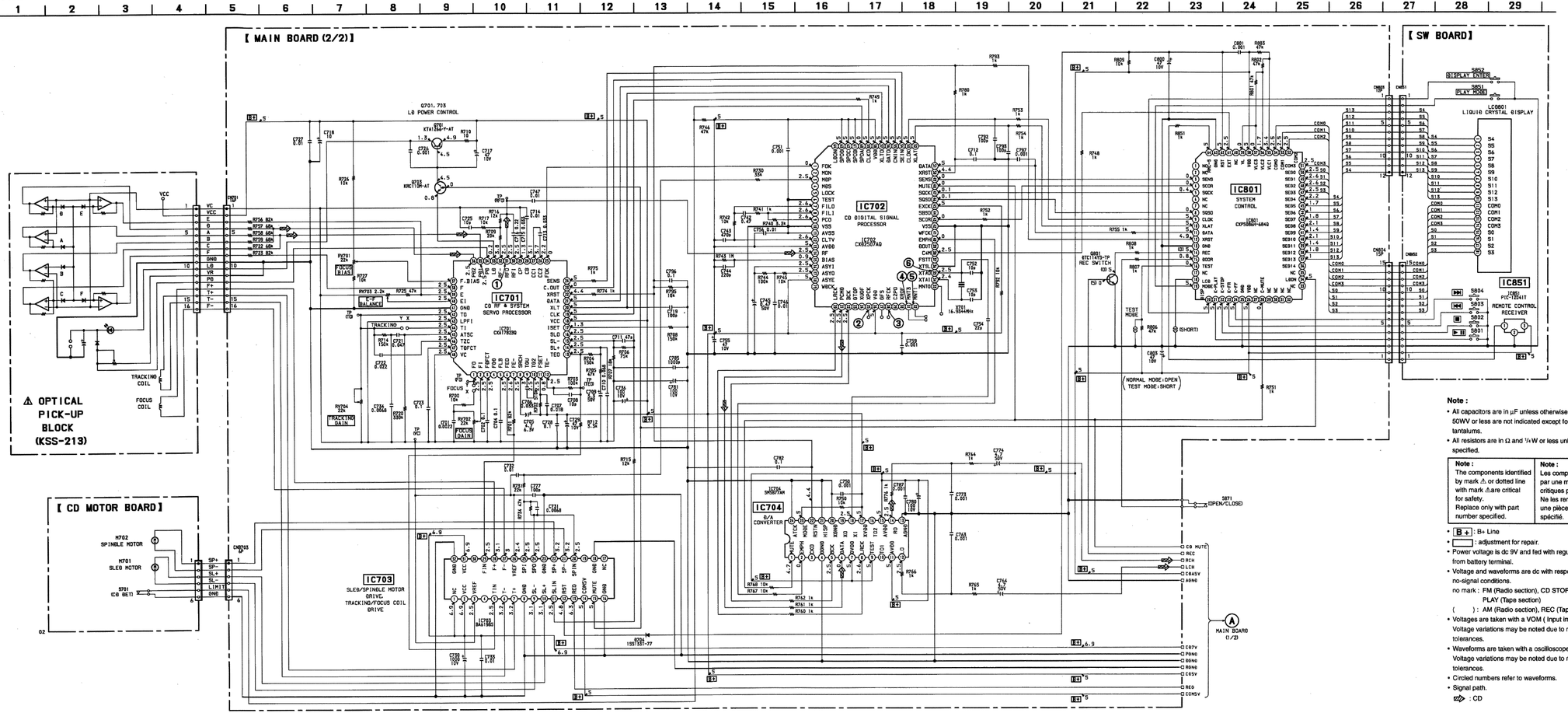
● IC BLOCK DIAGRAM –MAIN SECTION –

IC1 CXA1238S

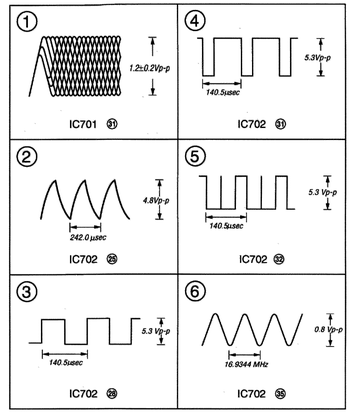


7-4. SCHEMATIC DIAGRAM – CD SECTION –

● Refer to page 31 for IC Block Diagrams.



● WAVEFORMS



Note :

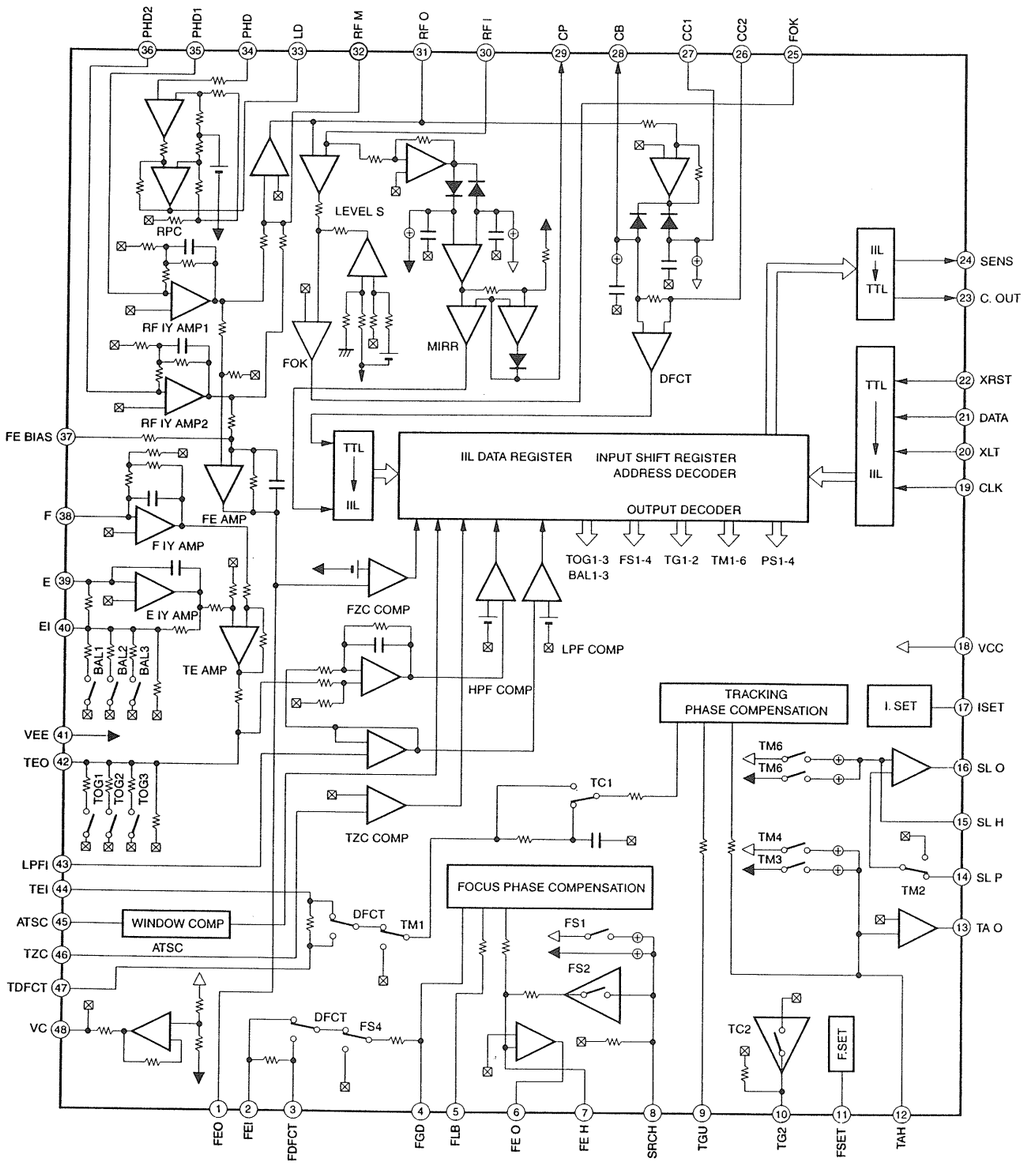
- All capacitors are in µF unless otherwise noted. pF: µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

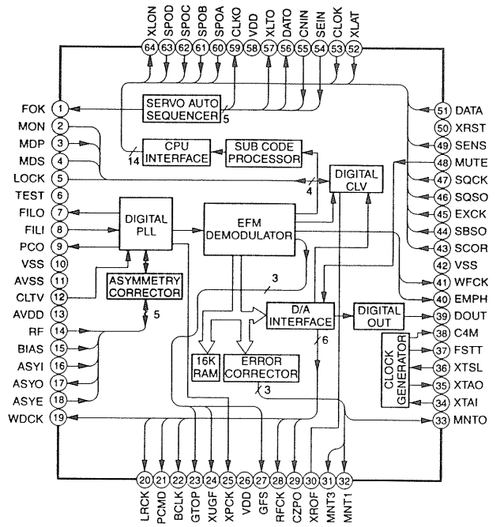
- B+ : B+ Line
- : adjustment for repair.
- Power voltage is dc 9V and fed with regulated dc power supply from battery terminal.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : FM (Radio section), CD STOP (CD section),
  PLAY (Tape section)
  ( ) : AM (Radio section), REC (Tape section)
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD

● IC BLOCK DIAGRAMS – CD SECTION –

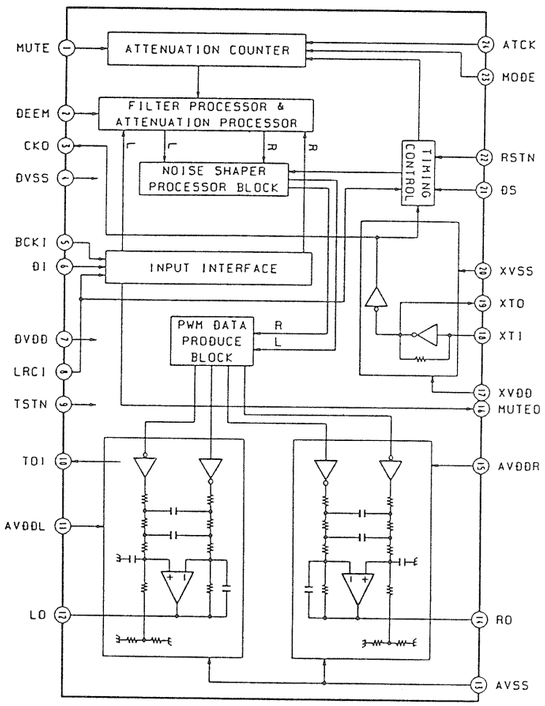
IC701 CXA1782BQ



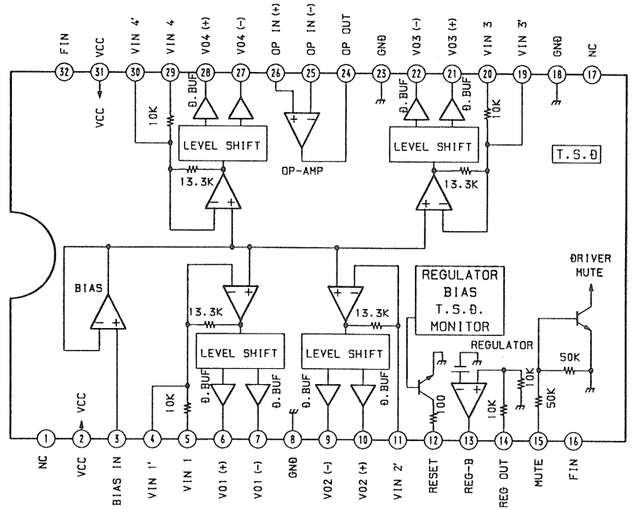
IC702 CXD2507AQ



IC704 SM5877AM



IC703 BA6198S



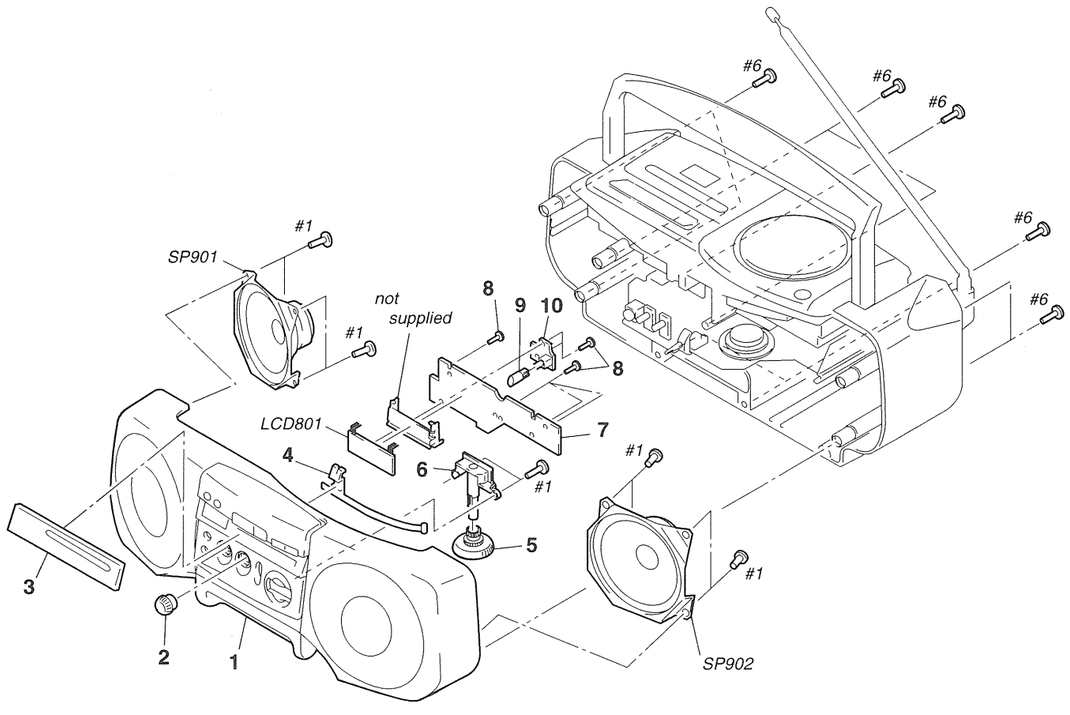
SECTION 8
EXPLODED VIEWS

NOTE :
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Color indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE) ••• (RED)
  ↑ ↑
  Parts color Cabinet's color
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
  CND : Canadian

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

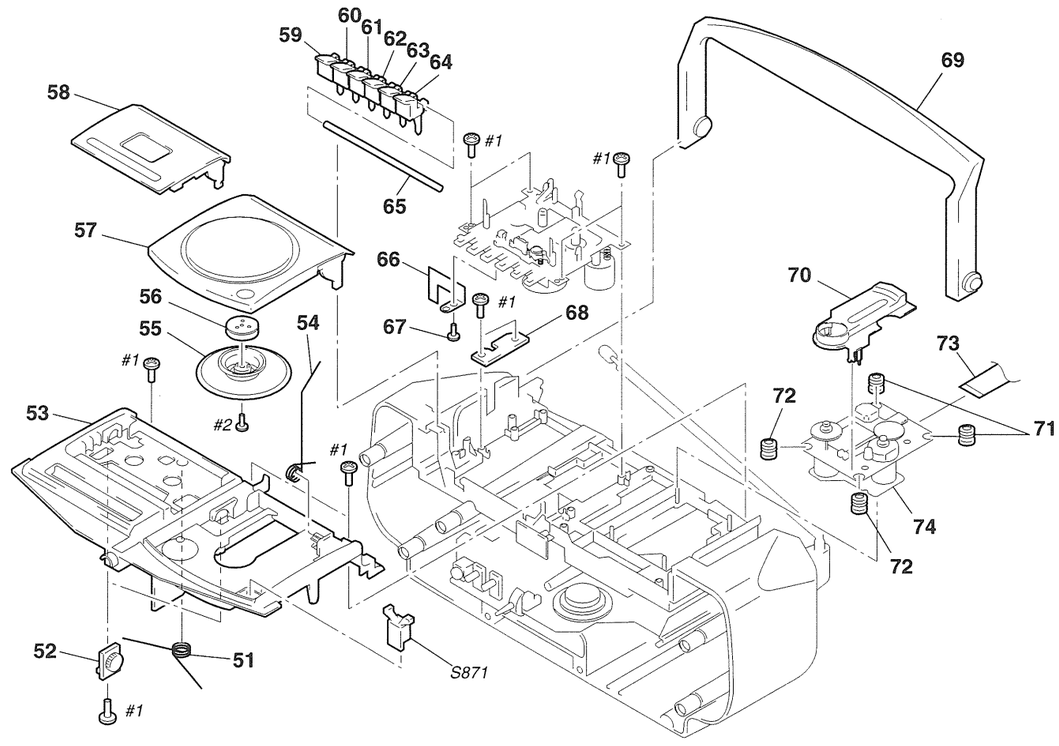
Les composants identifiés par une marque ⚠sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

8-1. FRONT CABINET SECTION



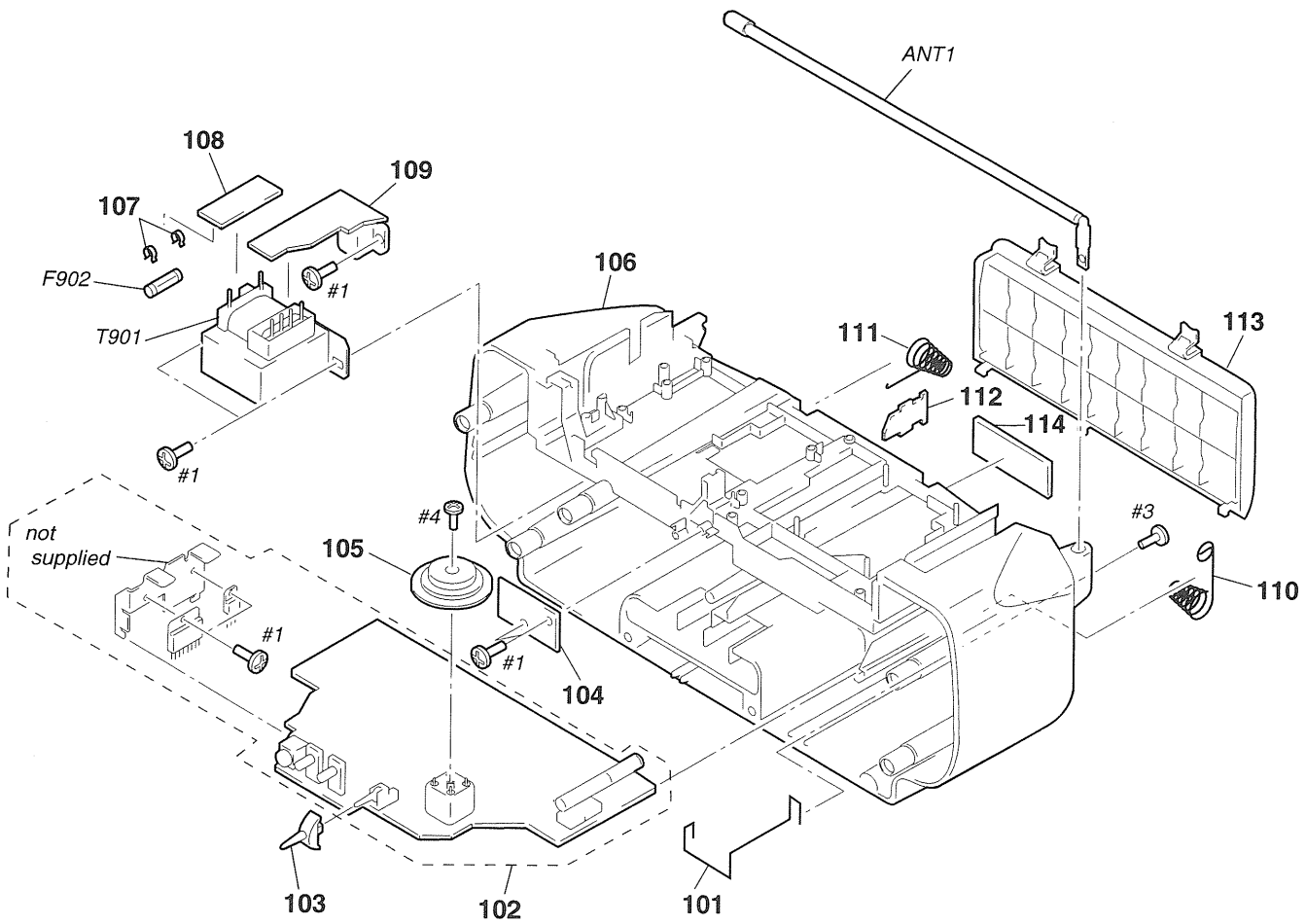
Ref. No.	Part No.	Description	Remark
1	X-3373-949-1	CABINET (FRONT) SUB ASSY ••• (BLACK) (CND)	
1	X-3373-398-1	CABINET (FRONT) SUB ASSY ••• (BLACK) (US)	
1	X-3373-941-1	CABINET (FRONT) SUB ASSY ••• (WHITE) (US)	
2	3-009-193-01	KNOB (VOL) ••• (BLACK)	
2	3-009-193-11	KNOB (VOL) ••• (WHITE) (US)	
3	3-012-690-01	WINDOW, TU ••• (BLACK)	
3	3-012-690-71	WINDOW, TU ••• (WHITE) (US)	
4	3-009-191-01	POINTER	
5	3-009-190-01	KNOB (TU) ••• (BLACK)	
5	3-009-190-11	KNOB (TU) ••• (WHITE) (US)	
* 6	3-009-189-01	CHASSIS, TU	
* 7	1-665-554-11	SW BOARD	
8	4-951-620-01	SCREW (2.6X8), +BVTP	
9	3-009-216-01	KNOB (MEGA BASS)	
* 10	1-665-557-11	MB SW BOARD	
LCD801	1-801-639-11	LCD	
SP901	1-505-531-11	SPEAKER (10cm) (L-CH)	
SP902	1-505-531-11	SPEAKER (10cm) (R-CH)	

8-2. UPPER CABINET SECTION



Ref. No.	Part No.	Description	Remark
51	3-009-208-01	SPRING, CASSETTE UP	
52	3-922-112-11	DAMPER	
53	3-009-186-01	CABINET (UPPER)	
54	3-009-209-01	SPRING, CD UP	
55	3-923-498-01	PLATE, CHUCK	
56	1-452-899-11	MAGNET	
57	3-009-187-01	LID, CD ••• (BLACK)	
57	3-009-187-11	LID, CD ••• (WHITE) (US)	
58	X-3373-389-1	HOLDER SUB ASSY, CASSETTE ••• (BLACK)	
58	X-3373-974-1	HOLDER SUB ASSY, CASSETTE ••• (WHITE) (US)	
59	3-009-196-01	BUTTON (REC) ••• (BLACK)	
59	3-009-196-11	BUTTON (REC) ••• (WHITE) (US)	
60	3-009-199-01	BUTTON (PLAY) ••• (BLACK)	
60	3-009-199-11	BUTTON (PLAY) ••• (WHITE) (US)	
61	3-009-198-01	BUTTON (REW) ••• (BLACK)	
61	3-009-198-11	BUTTON (REW) ••• (WHITE) (US)	
62	3-009-197-01	BUTTON (FF) ••• (BLACK)	
62	3-009-197-11	BUTTON (FF) ••• (WHITE) (US)	
63	3-009-200-01	BUTTON (STOP) ••• (BLACK)	
63	3-009-200-11	BUTTON (STOP) ••• (WHITE) (US)	
64	3-009-195-01	BUTTON (PAUSE) ••• (BLACK)	
64	3-009-195-11	BUTTON (PAUSE) ••• (WHITE) (US)	
* 65	3-009-206-01	SHAFT (MD)	
66	3-009-214-01	SPRING, REC	
67	4-951-620-01	SCREW (2.6X8), +BVTP	
* 68	1-665-037-11	REC SW BOARD	
69	3-009-201-01	HANDLE ••• (BLACK)	
69	3-009-201-11	HANDLE ••• (WHITE) (US)	
70	3-923-736-01	COVER, CD	
71	3-910-095-11	RUBBER, VIBRATION PROOF	
72	3-910-095-01	RUBBER, VIBRATION PROOF	
73	1-777-955-11	WIRE, PARALLEL (16 CORE)	
* 74	1-639-678-12	CD MOTOR BOARD	
S871	1-692-960-11	SWITCH, PUSH (1 KEY) (OPEN/CLOSE)	

8-3. REAR CABINET SECTION

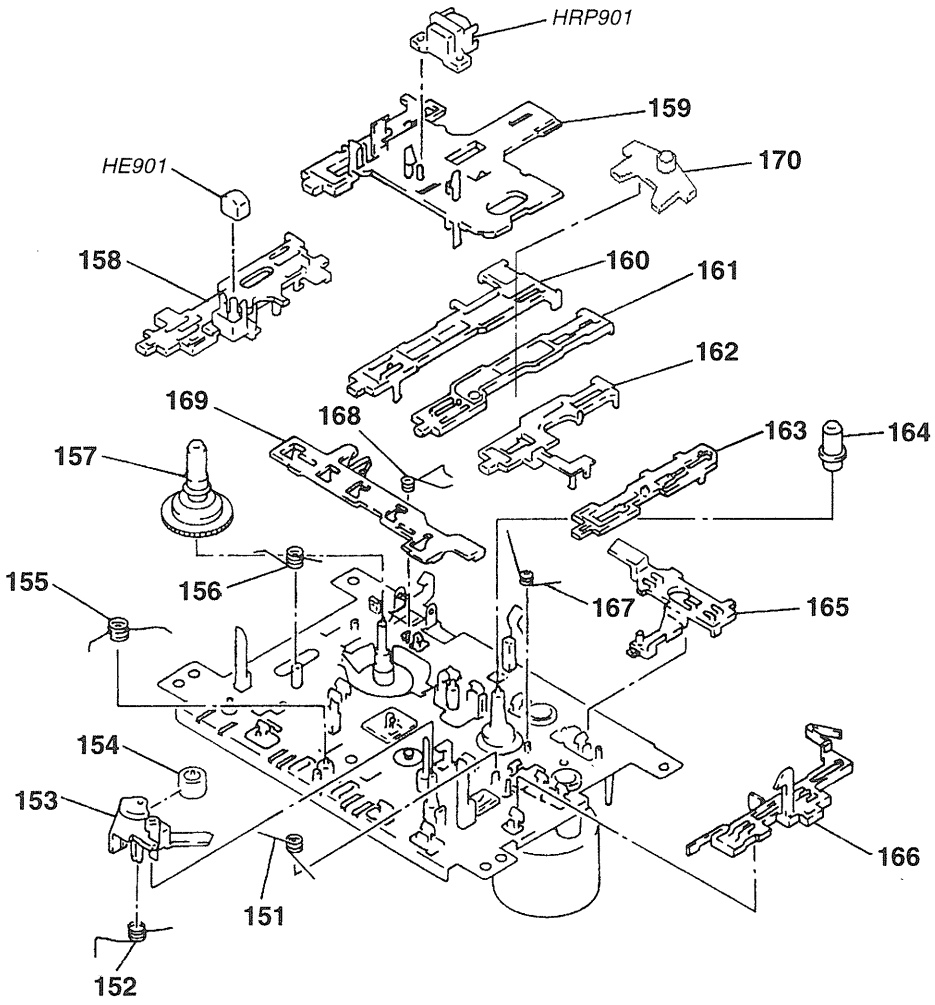


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
* 101	3-009-215-01	TERMINAL (ANALOG), ANTENNA	
* 102	A-3306-313-A	MAIN BOARD, COMPLETE	
103	3-009-194-01	KNOB (FUN)	
* 104	1-665-556-11	MEGA BASS BOARD	
105	3-009-192-01	GEAR, TUNING CAPACITOR	
106	3-013-805-01	CABINET (REAR)••• (BLACK) (US)	
106	3-013-805-11	CABINET (REAR)••• (WHITE) (US)	
106	3-013-805-21	CABINET (REAR)••• (BLACK) (CND)	
107	1-533-217-31	HOLDER FUSE	
* 108	1-665-036-11	POWER BOARD	
* 109	1-665-039-11	AC INLET BOARD	

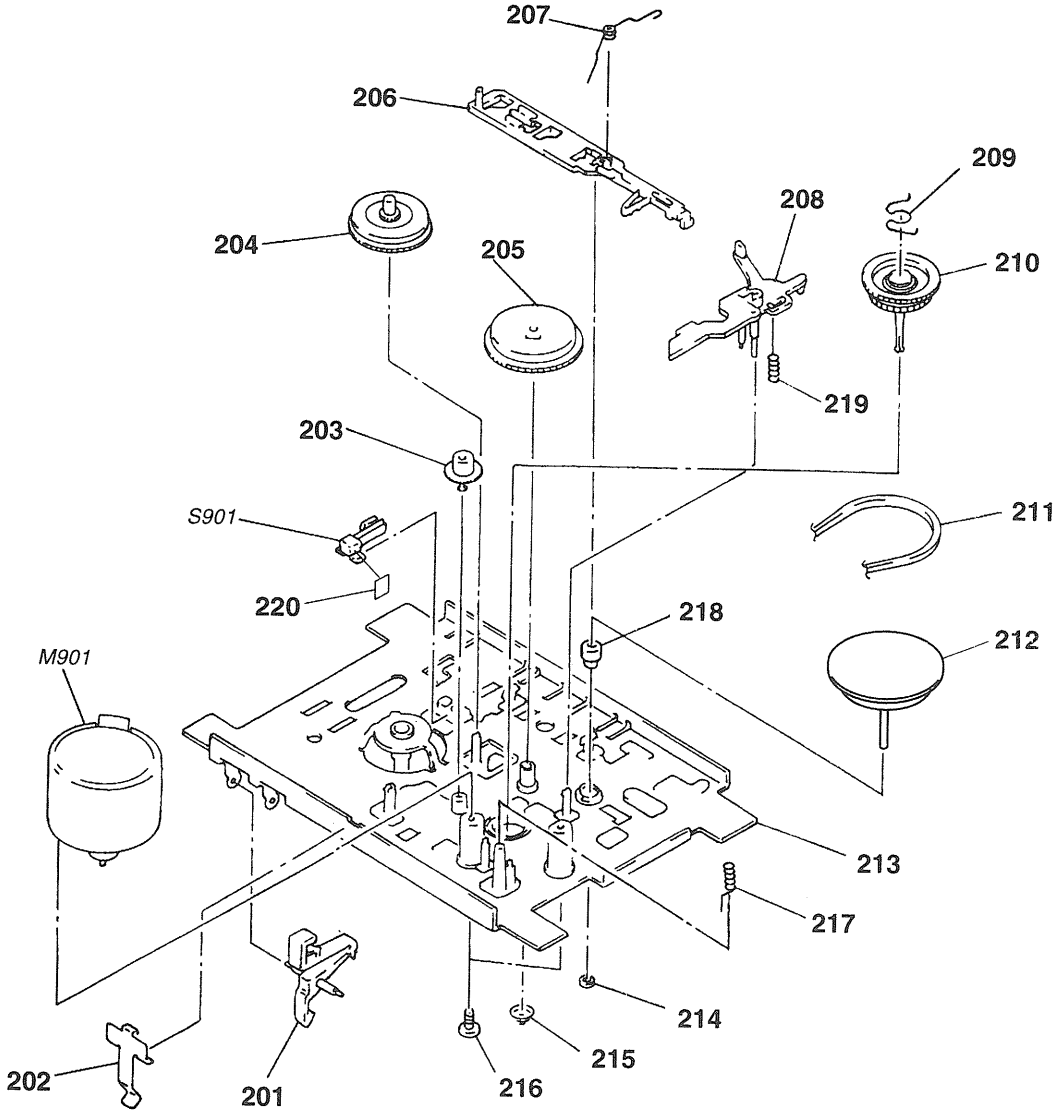
Ref. No.	Part No.	Description	Remark
110	3-009-210-01	SPRING (+ –)	
111	3-009-211-01	SPRING (–)	
* 112	1-665-038-11	BATT BOARD	
113	3-009-202-01	LID, BATTERY CASE ••• (BLACK)	
113	3-009-202-11	LID, BATTERY CASE ••• (WHITE) (US)	
114	3-011-605-01	DUCT COVER ••• (BLACK)	
114	3-011-605-11	DUCT COVER ••• (WHITE) (US)	
ANT1	1-501-918-11	ANTENNA, TELESCOPIC	
⚠F902	1-533-618-11	FUSE, GLASS CYLINDERICAL (3.15A/125V)	
⚠T901	1-429-101-11	TRANSFORMER, POWER	

8-4. MECHANISM DECK SECTION (1)
(MF-V10-117)



Ref. No.	Part No.	Description	Remark
151	3-933-010-01	SPRING (S/P), TORSION	
152	3-933-025-01	SPRING (P), TORSION	
153	3-933-026-01	LEVER (P)	
154	3-933-024-01	ROLLER, PINCH	
155	3-933-019-01	SPRING (F/R), TORSION	
156	3-933-028-01	SPRING (FWD), TORSION	
157	3-933-016-01	GEAR (S REEL)	
158	3-008-590-01	SLIDER (REC)	
159	3-008-592-01	BASE (H), HEAD	
* 160	3-008-588-01	SLIDER (REW)	
* 161	3-008-589-01	SLIDER (FF)	
* 162	3-008-587-01	SLIDER	
* 163	3-008-591-01	SLIDER (PAUSE)	
164	3-933-004-01	CLAW, REEL	
* 165	3-933-021-01	SLIDER (FRP)	
166	3-933-006-01	SLIDER (EJECT)	
167	3-934-833-01	SPRING (FRP)	
168	3-934-834-01	SPRING (BT)	
* 169	3-933-007-01	PLATE, LOCK	
* 170	3-012-114-01	LEVER (FR)	
HE901	1-543-876-11	HEAD (ERASE)	
HRP901	1-500-364-11	HEAD,MAGNETIC (RECORD/PLAYBACK)	

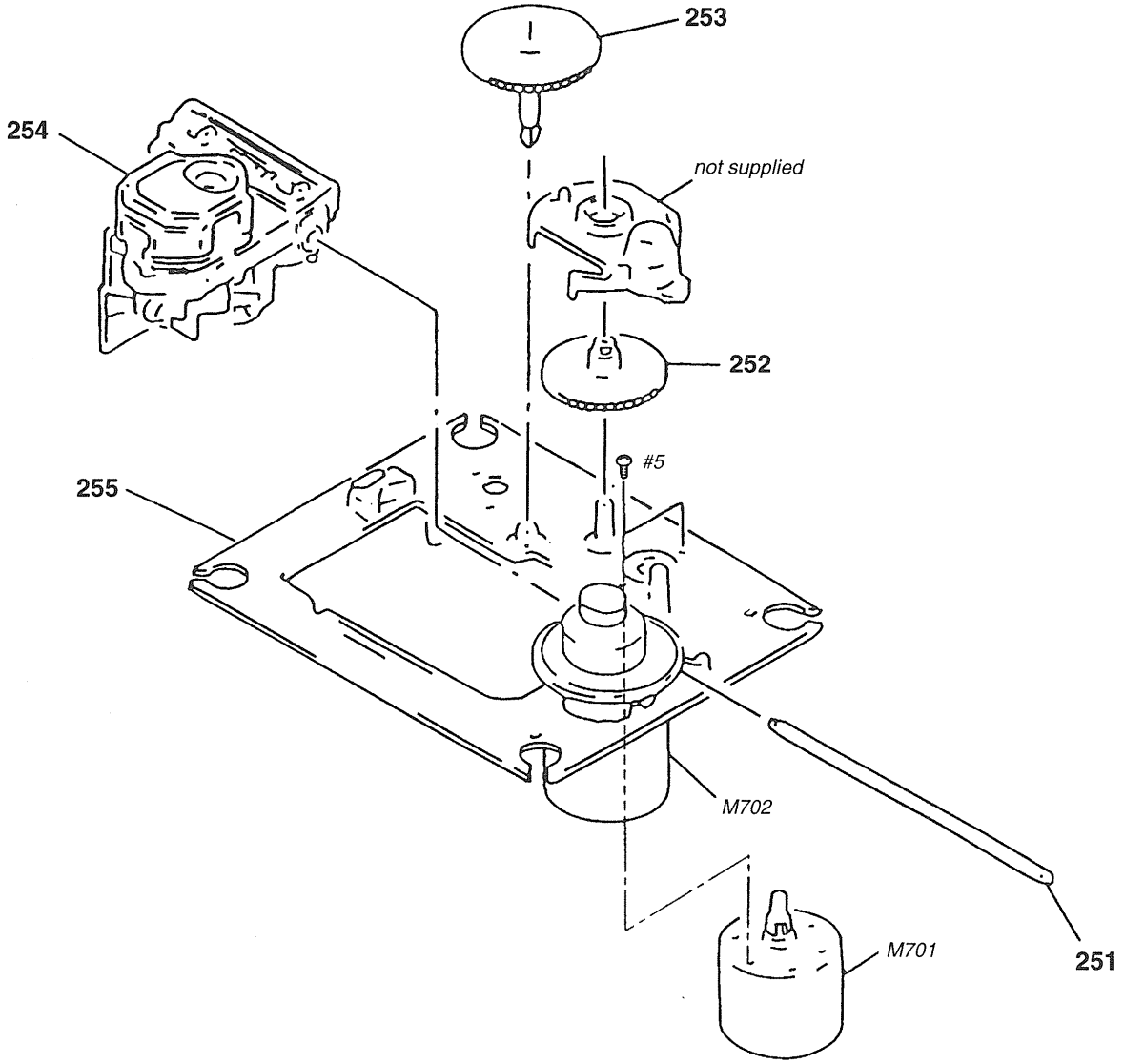
8-5. MECHANISM DECK SECTION (2)
(MF-V10-117)



Ref. No.	Part No.	Description	Remark
201	3-933-029-01	LEVER, ERASING PREVENTION	
202	3-933-182-01	SPRING, CASSETTE	
203	3-932-995-01	GEAR (MID)	
204	X-3371-667-1	CLUTCH ASSY	
205	3-932-997-01	GEAR (CAM)	
* 206	3-932-999-01	SLIDER (SW)	
207	3-932-998-01	SPRING (GROUND), TORSION	
208	3-932-996-01	LEVER (S.OFF)	
209	3-934-835-01	SPRING (S.OFF)	
210	X-3371-666-1	REEL ASSY, T	
211	3-933-020-01	BELT	

Ref. No.	Part No.	Description	Remark
212	X-3372-924-1	FLYWHEEL ASSY	
213	3-932-993-01	CHASSIS, OUTSERT	
214	3-343-358-01	RING, RETAINING	
215	3-933-005-01	SPRING (CAM), COMPRESSION	
216	7-621-770-87	SCREW +B 2.6X5	
217	3-937-760-01	SPRING (GROUND), COMPRESSION	
218	3-934-336-01	BEARING	
219	3-939-383-01	SPRING, COMPRESSION	
220	3-320-454-01	SHEET	
M901	A-3304-621-A	MOTOR ASSY	
S901	1-762-679-11	SWITCH, LEAF (MOTOR ON/OFF)	

8-6. OPTICAL PICK-UP SECTION (KSM-213CAM/C1NP)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
251	2-626-908-01	SHAFT, SLED	
252	2-627-003-02	GEAR (B) (RP)	
253	2-626-907-01	GEAR (A) (S)	
⚠254	8-820-018-02	OPTICAL PICK-UP KSS-213C	

Ref. No.	Part No.	Description	Remark
255	X-2625-770-1	CHASSIS ASSY (MB) (RP), MOTOR (INCLUDING M702) (SPINDLE)	
M701	X-2625-769-1	GEAR ASSY (MB)(RP), MOTOR (SLED)	

SECTION 9
ELECTRICAL PARTS LIST

AC INLET | BATT | CD MOTOR | MAIN

NOTE :

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE :Metal oxide-film resistor
  F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ , for example :
  uA.... : μ A.... , uPA.... : μ PA....
  uPB.... : μ PB.... , uPC.... : μ PC....
  uPD.... : μ PD....
- CAPACITORS
  uF : μ F
- COILS
  uH : μ H
- Abbreviation
  CND : Canadian

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	1-665-039-11	AC INLET BOARD			
		**********			
		< CAPACITOR >			
C907	1-162-294-31	CERAMIC	0.001uF	10%	50V
		< CONNECTOR >			
* CN906	1-691-573-11	PIN, CONNECTOR (PC BOARD) 2P			
		< JACK >			
⚠J901	1-540-009-11	INLET, AC (~ AC IN)			
**********					
*	1-665-038-11	BATT BOARD			
		**********			
**********					
*		CD MOTOR BOARD			
		**********			
		< CONNECTOR >			
CNP707	1-564-722-11	PIN, CONNECTOR (SMALL TYPE) 6P			
		< SWITCH >			
S701	1-572-085-11	SWITCH, LEAF (CD DET)			
**********					
*	A-3306-313-A	MAIN BOARD, COMPLETE			
		**********			
	3-009-192-01	GEAR, TUNING CAPACITOR			
	3-009-194-01	KNOB (FUN)			
	7-621-770-XX	SCREW +P 2.6X8			
	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S			
		< CAPACITOR >			
C1	1-162-215-31	CERAMIC	47PF	5%	50V
C2	1-162-306-11	CERAMIC	0.01uF	20%	16V
C3	1-104-664-11	ELECT	47uF	20%	10V
C5	1-162-205-31	CERAMIC	18PF	5%	50V
C6	1-102-961-00	CERAMIC	27PF	5%	50V
C7	1-102-943-00	CERAMIC	6.0PF	+-0.5PF	50V
C8	1-162-193-31	CERAMIC	3.3PF	10%	50V
C9	1-162-306-11	CERAMIC	0.01uF	20%	16V
C10	1-162-306-11	CERAMIC	0.01uF	20%	16V
C11	1-126-963-11	ELECT	4.7uF	20%	50V
C12	1-124-903-11	ELECT	1uF	20%	50V
C13	1-104-664-11	ELECT	47uF	20%	10V
C14	1-104-664-11	ELECT	47uF	20%	10V
C15	1-162-306-11	CERAMIC	0.01uF	20%	16V
C16	1-126-961-11	ELECT	2.2uF	20%	50V
C17	1-124-443-00	ELECT	100uF	20%	10V
C18	1-162-842-11	CERAMIC	0.018uF	10%	16V
C19	1-162-842-11	CERAMIC	0.018uF	10%	16V
C20	1-162-306-11	CERAMIC	0.01uF	20%	16V
C21	1-162-205-31	CERAMIC	18PF	5%	50V
C22	1-124-903-11	ELECT	1uF	20%	50V
C23	1-124-902-00	ELECT	0.47uF	20%	50V
C24	1-126-963-11	ELECT	4.7uF	20%	50V
C25	1-162-294-31	CERAMIC	0.001uF	10%	50V
C26	1-162-294-31	CERAMIC	0.001uF	10%	50V
C28	1-162-306-11	CERAMIC	0.01uF	20%	16V
C101	1-162-301-11	CERAMIC	0.0015uF	20%	16V
C103	1-104-664-11	ELECT	47uF	20%	10V
C104	1-161-020-11	CERAMIC	0.039uF	10%	16V
C105	1-162-302-11	CERAMIC	0.0022uF	20%	16V
C111	1-124-902-00	ELECT	0.47uF	20%	50V
C113	1-124-903-11	ELECT	1uF	20%	50V
C150	1-126-963-11	ELECT	4.7uF	20%	50V
C151	1-136-160-00	FILM	0.039uF	5%	50V
C191	1-126-927-11	ELECT	2200uF	20%	10V
C192	1-124-903-11	ELECT	1uF	20%	50V
C193	1-162-839-11	CERAMIC	0.01uF	10%	16V
C194	1-102-074-00	CERAMIC	0.001uF	10%	16V
C201	1-162-301-11	CERAMIC	0.0015uF	20%	16V
C203	1-104-664-11	ELECT	47uF	20%	10V
C204	1-161-020-11	CERAMIC	0.039uF	10%	16V
C205	1-162-302-11	CERAMIC	0.0022uF	20%	16V
C211	1-124-902-00	ELECT	0.47uF	20%	50V
C213	1-124-903-11	ELECT	1uF	20%	50V
C250	1-126-963-11	ELECT	4.7uF	20%	50V
C251	1-136-160-00	FILM	0.039uF	5%	50V
C291	1-126-927-11	ELECT	2200uF	20%	10V
C292	1-124-903-11	ELECT	1uF	20%	50V
C293	1-162-839-11	CERAMIC	0.01uF	10%	16V
C294	1-102-074-00	CERAMIC	0.001uF	10%	16V
C304	1-124-443-00	ELECT	100uF	20%	10V
C305	1-124-443-00	ELECT	100uF	20%	10V
C306	1-124-443-00	ELECT	100uF	20%	10V
C340	1-162-294-31	CERAMIC	0.001uF	10%	50V

MAIN

Ref. No.	Part No.	Description			Remark
C342	1-130-481-00	MYLAR	0.0068uF	5%	50V
C344	1-104-664-11	ELECT	47uF	20%	10V
C351	1-124-907-11	ELECT	10uF	20%	50V
C391	1-104-666-11	ELECT	220uF	20%	10V
C392	1-126-961-11	ELECT	2.2uF	20%	50V
C393	1-124-902-00	ELECT	0.47uF	20%	50V
C394	1-162-294-31	CERAMIC	0.001uF	10%	50V
C395	1-162-294-31	CERAMIC	0.001uF	10%	50V
C396	1-162-839-11	CERAMIC	0.01uF	10%	16V
C397	1-162-839-11	CERAMIC	0.01uF	10%	16V
C650	1-104-664-11	ELECT	47uF	20%	16V
C651	1-126-963-11	ELECT	4.7uF	20%	50V
C653	1-104-664-11	ELECT	47uF	20%	10V
C701	1-162-302-11	CERAMIC	0.0022uF	30%	16V
C702	1-136-165-00	FILM	0.1uF	5%	50V
C704	1-136-165-00	FILM	0.1uF	5%	50V
C705	1-131-375-00	TANTALUM	4.7uF	10%	10V
C706	1-130-489-00	MYLAR	0.033uF	5%	50V
C707	1-137-440-11	MYLAR	0.018uF	5%	50V
C708	1-162-199-31	CERAMIC	10PF	5%	50V
C709	1-126-962-11	ELECT	3.3uF	20%	50V
C710	1-137-375-11	MYLAR	0.068uF	5%	50V
C711	1-162-215-31	CERAMIC	47PF	5%	50V
C712	1-161-772-11	CERAMIC	0.1uF	10%	25V
C713	1-130-489-00	MYLAR	0.033uF	5%	50V
C714	1-162-306-11	CERAMIC	0.01uF	20%	16V
C715	1-130-489-00	MYLAR	0.033uF	5%	50V
C716	1-136-169-00	FILM	0.22uF	5%	50V
C717	1-104-664-11	ELECT	47uF	20%	10V
C718	1-124-907-11	ELECT	10uF	20%	50V
C719	1-162-282-31	CERAMIC	100PF	10%	50V
C721	1-137-374-11	MYLAR	0.047uF	5%	50V
C722	1-161-494-00	CERAMIC	0.022uF		25V
C723	1-136-165-00	FILM	0.1uF	5%	50V
C725	1-162-199-31	CERAMIC	10PF	5%	50V
C726	1-162-294-31	CERAMIC	0.001uF	10%	50V
C727	1-162-306-11	CERAMIC	0.01uF	20%	16V
C728	1-161-772-11	CERAMIC	0.1uF	10%	25V
C729	1-104-664-11	ELECT	47uF	20%	10V
C730	1-124-473-11	ELECT	1000uF	20%	10V
C731	1-162-305-11	CERAMIC	0.0068uF	30%	16V
C732	1-162-306-11	CERAMIC	0.01uF	20%	16V
C733	1-162-839-11	CERAMIC	0.01uF	10%	16V
C734	1-162-305-11	CERAMIC	0.0068uF	30%	16V
C736	1-124-443-00	ELECT	100uF	20%	10V
C742	1-136-173-00	FILM	0.47uF	5%	50V
C743	1-162-290-31	CERAMIC	470PF	10%	50V
C744	1-162-286-31	CERAMIC	220PF	10%	50V
C745	1-124-902-00	ELECT	0.47uF	20%	50V
C746	1-162-306-11	CERAMIC	0.01uF	20%	16V
C747	1-162-306-11	CERAMIC	0.01uF	20%	16V
C750	1-162-294-31	CERAMIC	0.001uF	10%	50V
C751	1-162-294-31	CERAMIC	0.001uF	10%	50V
C752	1-162-199-31	CERAMIC	10PF	5%	50V
C753	1-162-199-31	CERAMIC	10PF	5%	50V
C754	1-162-207-31	CERAMIC	22PF	5%	50V
C755	1-104-664-11	ELECT	47uF	20%	10V
C756	1-162-306-11	CERAMIC	0.01uF	20%	16V
C759	1-162-294-31	CERAMIC	0.001uF	10%	50V
C763	1-162-294-31	CERAMIC	0.001uF	10%	50V
C764	1-126-963-11	ELECT	4.7uF	20%	50V
C773	1-162-294-31	CERAMIC	0.001uF	10%	50V
C774	1-126-963-11	ELECT	4.7uF	20%	50V
C777	1-162-282-11	CERAMIC	100PF	10%	50V
C780	1-124-443-00	ELECT	100uF	20%	10V
C781	1-124-443-00	ELECT	100uF	20%	10V
C782	1-161-772-11	CERAMIC	0.1uF	10%	25V
C785	1-162-294-31	CERAMIC	0.001uF	10%	50V
C787	1-162-294-31	CERAMIC	0.001uF	10%	50V
C792	1-162-282-31	CERAMIC	100PF	10%	50V
C793	1-162-282-31	CERAMIC	100PF	10%	50V
C796	1-161-772-11	CERAMIC	0.1uF	10%	25V
C797	1-162-294-31	CERAMIC	0.001uF	10%	50V
C800	1-104-664-11	ELECT	47uF	20%	10V
C801	1-162-294-31	CERAMIC	0.001uF	10%	50V
C803	1-104-664-11	ELECT	47uF	20%	10V
C910	1-126-937-11	ELECT	4700uF	20%	16V
C911	1-162-839-11	CERAMIC	0.01uF	10%	16V
C951	1-102-074-00	CERAMIC	0.001uF	10%	16V
C952	1-102-074-00	CERAMIC	0.001uF	10%	16V
C953	1-104-664-11	ELECT	47uF	20%	10V
C955	1-124-443-00	ELECT	100uF	20%	10V
C956	1-104-664-11	ELECT	47uF	20%	10V
C957	1-162-294-31	CERAMIC	0.001uF	10%	50V

< FILTER >

Ref. No.	Part No.	Description
CF1	1-760-235-11	FILTER, CERAMIC
CF2	1-577-072-11	FILTER, CERAMIC

< CONNECTOR >

Ref. No.	Part No.	Description
CN301	1-506-987-11	PIN, CONNECTOR (PC BOARD) 5P
CN302	1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P
CN601	1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P
CN701	1-770-674-11	CONNECTOR, FFC/FPC 16P
CN803	1-691-583-11	PIN, CONNECTOR (PC BOARD) 12P
CN804	1-691-585-11	PIN, CONNECTOR 15P
CN851	1-691-586-11	PIN, CONNECTOR (PC BOARD) 15P
* CN911	1-691-573-11	PIN, CONNECTOR (PC BOARD) 2P
CN912	1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P

< TRIMMER >

Ref. No.	Part No.	Description
CT-1	1-141-559-11	CAP, VAR (TUNE)
CT-2	1-141-559-11	CAP, VAR (TUNE)
CT-3	1-141-559-11	CAP, VAR (TUNE)
CT-4	1-141-559-11	CAP, VAR (TUNE)

< VARIABLE CAPACITOR >

Ref. No.	Part No.	Description
CV-1	1-141-559-11	CAP, VAR (TUNE)
CV-2	1-141-559-11	CAP, VAR (TUNE)
CV-3	1-141-559-11	CAP, VAR (TUNE)
CV-4	1-141-559-11	CAP, VAR (TUNE)

< DIODE >

Ref. No.	Part No.	Description
D391	8-719-911-19	DIODE 1SS119
D620	8-719-911-19	DIODE 1SS119
D651	8-719-911-19	DIODE 1SS119
D652	8-719-911-19	DIODE 1SS119
D653	8-719-911-19	DIODE 1SS119

Ref. No.	Part No.	Description	Remark
D655	8-719-911-19	DIODE 1SS119	
D656	8-719-911-19	DIODE 1SS119	
D704	8-719-911-19	DIODE 1SS119	
D801	8-719-987-65	DIODE 1N4148M	
D802	8-719-987-65	DIODE 1N4148M	
D911	8-719-059-97	LED L-34HD (OPR/BATT)	
D912	8-719-911-19	DIODE 1SS119	
D950	8-719-911-19	DIODE 1SS119	
D951	8-719-110-04	DIODE RD7.5ES-B3	
		< IC >	
IC1	8-752-050-20	IC CXA1238S	
IC301	8-759-264-71	IC TA2068N	
IC305	8-759-452-80	IC LA4600	
IC701	8-752-069-56	IC CXA1782BQ	
IC702	8-752-372-94	IC CXD2507AQ	
IC703	8-759-453-99	IC BA6198S	
IC704	8-759-426-44	IC SM5877AM	
IC801	8-752-874-88	IC CXP5086H-684Q	
		< JACK >	
J301	1-566-891-11	JACK (🎧)	
		< COIL >	
L1	1-409-915-11	COIL, AIR-CORE	
L2	1-411-387-11	COIL, AIR-CORE	
L3	1-501-841-11	ANTENNA, FERRITE-ROD (MW)	
L4	1-406-040-00	COIL (OSC)	
		< TRANSISTOR >	
Q1	8-729-921-65	TRANSISTOR DTC143ES	
Q151	8-729-900-74	TRANSISTOR DTC143TS	
Q251	8-729-900-74	TRANSISTOR DTC143TS	
Q340	8-729-281-53	TRANSISTOR 2SC1815-GR	
Q701	8-729-037-02	TRANSISTOR KTA1266Y-AT	
Q703	8-729-036-80	TRANSISTOR KRC110M-AT	
Q801	8-729-904-36	TRANSISTOR DTC114YS	
Q951	8-729-021-82	TRANSISTOR 2SD2396K	
Q952	8-729-801-84	TRANSISTOR 2SB1013-4	
		< RESISTOR >	
R1	1-247-807-31	CARBON 100 5% 1/4W	
R2	1-249-421-11	CARBON 2.2K 5% 1/4W	
R3	1-249-441-11	CARBON 100K 5% 1/4W	
R4	1-247-843-11	CARBON 3.3K 5% 1/4W	
R5	1-249-411-11	CARBON 330 5% 1/4W	
R6	1-247-807-31	CARBON 100 5% 1/4W	
R7	1-249-427-11	CARBON 6.8K 5% 1/4W	
R8	1-249-427-11	CARBON 6.8K 5% 1/4W	
R9	1-249-429-11	CARBON 10K 5% 1/4W	
R10	1-249-429-11	CARBON 10K 5% 1/4W	
R11	1-249-425-11	CARBON 4.7K 5% 1/4W	
R12	1-249-425-11	CARBON 4.7K 5% 1/4W	
R13	1-249-421-11	CARBON 2.2K 5% 1/4W	
R14	1-249-429-11	CARBON 10K 5% 1/4W	
R101	1-249-431-11	CARBON 15K 5% 1/4W	
R102	1-249-404-00	CARBON 82 5% 1/4W	
R103	1-249-440-11	CARBON 82K 5% 1/4W	
R104	1-247-843-11	CARBON 3.3K 5% 1/4W	
R105	1-249-417-11	CARBON 1K 5% 1/4W	

Ref. No.	Part No.	Description			Remark
R111	1-249-425-11	CARBON	4.7K	5%	1/4W
R113	1-247-813-11	CARBON	3.3K	5%	1/4W
R114	1-249-415-11	CARBON	680	5%	1/4W
R149	1-249-429-11	CARBON	10K	5%	1/4W
R191	1-247-807-31	CARBON	100	5%	1/4W
R192	1-249-425-11	CARBON	4.7K	5%	1/4W
R194	1-249-417-11	CARBON	1K	5%	1/4W
R201	1-249-431-11	CARBON	15K	5%	1/4W
R202	1-249-404-00	CARBON	82	5%	1/4W
R203	1-249-440-11	CARBON	82K	5%	1/4W
R204	1-247-843-11	CARBON	3.3K	5%	1/4W
R205	1-249-417-11	CARBON	1K	5%	1/4W
R211	1-249-425-11	CARBON	4.7K	5%	1/4W
R213	1-247-843-11	CARBON	3.3K	5%	1/4W
R214	1-249-415-11	CARBON	680	5%	1/4W
R249	1-249-429-11	CARBON	10K	5%	1/4W
R291	1-247-807-31	CARBON	100	5%	1/4W
R292	1-249-425-11	CARBON	4.7K	5%	1/4W
R294	1-249-417-11	CARBON	1K	5%	1/4W
R304	1-247-903-00	CARBON	1M	5%	1/4W
R305	1-249-407-11	CARBON	150	5%	1/4W
R306	1-249-429-11	CARBON	10K	5%	1/4W
R307	1-249-429-11	CARBON	10K	5%	1/4W
R308	1-249-429-11	CARBON	10K	5%	1/4W
R314	1-249-399-11	CARBON	33	5%	1/4W
R341	1-249-393-11	CARBON	10	5%	1/4W
R342	1-249-435-11	CARBON	33K	5%	1/4W
R351	1-249-429-11	CARBON	10K	5%	1/4W
R391	1-249-441-11	CARBON	100K	5%	1/4W
R392	1-249-417-11	CARBON	1K	5%	1/4W
R393	1-247-903-00	CARBON	1M	5%	1/4W
R619	1-249-429-11	CARBON	10K	5%	1/4W
R620	1-249-429-11	CARBON	10K	5%	1/4W
R623	1-249-429-11	CARBON	10K	5%	1/4W
R624	1-249-429-11	CARBON	10K	5%	1/4W
R625	1-249-429-11	CARBON	10K	5%	1/4W
R700	1-249-429-11	CARBON	10K	5%	1/4W
R701	1-249-440-11	CARBON	82K	5%	1/4W
R702	1-247-896-11	CARBON	510K	5%	1/4W
R703	1-249-441-11	CARBON	100K	5%	1/4W
R704	1-247-883-00	CARBON	150K	5%	1/4W
R705	1-249-437-11	CARBON	47K	5%	1/4W
R706	1-247-876-11	CARBON	75K	5%	1/4W
R707	1-249-432-11	CARBON	18K	5%	1/4W
R708	1-247-883-00	CARBON	150K	5%	1/4W
R709	1-247-862-11	CARBON	20K	5%	1/4W
R710	1-249-393-11	CARBON	10	5%	1/4W
R712	1-247-843-11	CARBON	3.3K	5%	1/4W
R714	1-247-883-00	CARBON	150K	5%	1/4W
R715	1-249-430-11	CARBON	12K	5%	1/4W
R716	1-249-430-11	CARBON	12K	5%	1/4W
R717	1-249-429-11	CARBON	10K	5%	1/4W
R720	1-247-891-00	CARBON	330K	5%	1/4W
R722	1-249-439-11	CARBON	68K	5%	1/4W
R723	1-249-440-11	CARBON	82K	5%	1/4W
R725	1-249-437-11	CARBON	47K	5%	1/4W
R726	1-249-429-11	CARBON	10K	5%	1/4W
R727	1-249-429-11	CARBON	10K	5%	1/4W
R730	1-249-435-11	CARBON	33K	5%	1/4W

MAIN | M/B SW | MEGA BASS

Ref. No.	Part No.	Description			Remark
R731	1-249-433-11	CARBON	22K	5%	1/4W
R734	1-249-437-11	CARBON	47K	5%	1/4W
R740	1-247-843-11	CARBON	3.3K	5%	1/4W
R741	1-249-417-11	CARBON	1K	5%	1/4W
R742	1-249-429-11	CARBON	10K	5%	1/4W
R743	1-247-903-00	CARBON	1M	5%	1/4W
R744	1-249-441-11	CARBON	100K	5%	1/4W
R745	1-249-429-11	CARBON	10K	5%	1/4W
R746	1-249-437-11	CARBON	47K	5%	1/4W
R748	1-249-417-11	CARBON	1K	5%	1/4W
R749	1-249-417-11	CARBON	1K	5%	1/4W
R750	1-249-429-11	CARBON	10K	5%	1/4W
R751	1-249-417-11	CARBON	1K	5%	1/4W
R752	1-249-417-11	CARBON	1K	5%	1/4W
R753	1-249-417-11	CARBON	1K	5%	1/4W
R754	1-249-417-11	CARBON	1K	5%	1/4W
R755	1-249-417-11	CARBON	1K	5%	1/4W
R756	1-249-440-11	CARBON	82K	5%	1/4W
R757	1-249-439-11	CARBON	68K	5%	1/4W
R758	1-249-439-11	CARBON	68K	5%	1/4W
R759	1-249-439-11	CARBON	68K	5%	1/4W
R760	1-249-417-11	CARBON	1K	5%	1/4W
R761	1-249-417-11	CARBON	1K	5%	1/4W
R762	1-249-417-11	CARBON	1K	5%	1/4W
R764	1-249-417-11	CARBON	1K	5%	1/4W
R765	1-249-417-11	CARBON	1K	5%	1/4W
R766	1-249-417-11	CARBON	1K	5%	1/4W
R767	1-249-429-11	CARBON	10K	5%	1/4W
R768	1-249-429-11	CARBON	10K	5%	1/4W
R774	1-249-417-11	CARBON	1K	5%	1/4W
R775	1-249-417-11	CARBON	1K	5%	1/4W
R776	1-249-417-11	CARBON	1K	5%	1/4W
R780	1-249-417-11	CARBON	1K	5%	1/4W
R792	1-249-429-11	CARBON	10K	5%	1/4W
R793	1-249-417-11	CARBON	1K	5%	1/4W
R795	1-249-429-11	CARBON	10K	5%	1/4W
R801	1-249-437-11	CARBON	47K	5%	1/4W
R802	1-249-437-11	CARBON	47K	5%	1/4W
R803	1-249-437-11	CARBON	47K	5%	1/4W
R806	1-249-437-11	CARBON	47K	5%	1/4W
R807	1-249-417-11	CARBON	1K	5%	1/4W
R808	1-249-417-11	CARBON	1K	5%	1/4W
R809	1-249-429-11	CARBON	10K	5%	1/4W
R851	1-249-417-11	CARBON	1K	5%	1/4W
⚠R901	1-219-123-11	FUSIBLE	0.47	5%	1/2W F
⚠R902	1-219-123-11	FUSIBLE	0.47	5%	1/2W F
⚠R903	1-219-123-11	FUSIBLE	0.47	5%	1/2W F
R911	1-247-828-11	CARBON	750	5%	1/4W
R912	1-247-816-11	CARBON	240	5%	1/4W
R951	1-249-409-11	CARBON	220	5%	1/4W

< VARIABLE RESISTOR >

RV1	1-228-995-00	RES, ADJ, CARBON 22K (VCO)
RV351	1-225-438-11	RES, VAR, CARBON 20K/20K (TONE)
RV352	1-225-439-11	RES, VAR, CARBON 20K/20K (VOL)
RV701	1-228-995-00	RES, ADJ, CARBON 22K (FOCUS BIAS)
RV702	1-228-995-00	RES, ADJ, CARBON 22K (FOCUS GAIN)
RV703	1-228-991-00	RES, ADJ, CERMET 2.2K (E-F BALANCE)
RV704	1-228-995-00	RES, ADJ, CARBON 22K (TRACKING GAIN)

< SWITCH >

S351	1-571-345-11	SWITCH, LEVER SLIDE (FUNCTION)

< TRANSFORMER >

T1	1-409-944-11	COIL (DET)
T2	1-416-155-11	COIL (455KHZ IFT)
T301	1-433-268-00	BIAS OSC TRANS

< VIBRATOR >

X701	1-760-793-11	VIBRATOR, CERAMIC (16.9344MHz)

****

*	1-665-557-11	M/B SW BOARD

****

< SWITCH >

S355	1-762-950-11	SWITCH, PUSH (2 KEY) (MEGA BASS)

****

*	1-665-556-11	MEGA BASS BOARD

****

< CAPACITOR >

C155	1-136-165-00	FILM	0.1uF	5%	50V
C156	1-136-165-00	FILM	0.1uF	5%	50V
C255	1-136-165-00	FILM	0.1uF	5%	50V
C256	1-136-165-00	FILM	0.1uF	5%	50V
C352	1-124-907-11	ELECT	10uF	20%	50V

< CONNECTOR >

* CN308	1-691-573-11	PIN, CONNECTOR (PC BOARD) 2P

< DIODE >

D352	8-719-991-33	DIODE 1SS133T-77

< TRANSISTOR >

Q155	8-729-119-78	TRANSISTOR 2SC403SP-51
Q255	8-729-119-78	TRANSISTOR 2SC403SP-51

< RESISTOR >

R155	1-249-425-11	CARBON	4.7K	5%	1/4W
R157	1-249-417-11	CARBON	1K	5%	1/4W
R255	1-249-425-11	CARBON	4.7K	5%	1/4W
R257	1-249-417-11	CARBON	1K	5%	1/4W
R352	1-249-437-11	CARBON	47K	5%	1/4W
R353	1-249-417-11	CARBON	1K	5%	1/4W

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The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.

Les composants identifiés par une marque ⚠sont critiques pour la sécurité. Ne les remplacer que par une pièce

Ref. No.	Part No.	Description			Remark
*	1-665-036-11	POWER BOARD, COMPLETE			
		**********			
	1-533-217-31	HOLDER FUSE			
		< CAPACITOR >			
C901	1-161-055-00	CERAMIC	0.022uF	10%	50V
C902	1-161-055-00	CERAMIC	0.022uF	10%	50V
C903	1-161-055-00	CERAMIC	0.022uF	10%	50V
C904	1-161-055-00	CERAMIC	0.022uF	10%	50V
C905	1-136-165-00	FILM	0.1uF	5%	50V
C906	1-136-165-00	FILM	0.1uF	5%	50V
		< DIODE >			
D901	8-719-063-79	DIODE IN4002			
D902	8-719-063-79	DIODE IN4002			
D903	8-719-063-79	DIODE IN4002			
D904	8-719-063-79	DIODE IN4002			
		< FUSE >			
⚠F902	1-533-618-11	FUSE, GLASS CYLINDERICAL (3.15A/125V)			
**********					
*	1-665-037-11	REC SW BOARD			
		**********			
		< SWITCH >			
S301	1-762-565-11	SWITCH, SLIDE (REC/PB)			
**********					
*	1-665-554-11	SW BOARD			
		**********			
		< IC >			
IC851	8-749-012-76	IC PIC-12041T			
		< LIQUID CRYSTAL DISPLAY >			
LCD801	1-801-639-11	LCD			
		< SWITCH >			
S801	1-762-798-11	SWITCH, KEYBOARD (▶II)			
S802	1-762-798-11	SWITCH, KEYBOARD (■)			
S803	1-762-798-11	SWITCH, KEYBOARD (I◀◀)			
S804	1-762-798-11	SWITCH, KEYBOARD (▶▶I)			
S851	1-762-798-11	SWITCH, KEYBOARD (PLAY MODE)			
S852	1-762-798-11	SWITCH, KEYBOARD (DISPLAY ENTER)			
**********					

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
56	1-452-899-11	MAGNET	
73	1-777-955-11	WIRE, PARALLEL (16 CORE)	
107	1-533-217-31	HOLDER FUSE	
⚠254	8-820-018-02	OPTICAL PICK-UP KSS-213C	
255	X-2625-770-1	CHASSIS ASSY (MB) (RP), MOTOR (INCLUDING M702) (SPINDLE)	
ANT1	1-501-918-11	ANTENNA, TELESCOPIC	
⚠F902	1-533-618-11	FUSE, GLASS CYLINDERICAL (3.15A/125V)	
HE901	1-543-876-11	HEAD (ERASE)	
HRP901	1-500-364-11	HEAD,MAGNETIC(RECORD/PLAYBACK)	
LCD801	1-801-639-11	LCD	
M701	X-2625-769-1	GEAR ASSY (MB) (RP), MOTOR(SLED)	
M901	A-3304-621-A	MOTOR ASSY	
S871	1-692-960-11	SWITCH, PUSH (1 KEY) (OPEN/CLOSE)	
S901	1-762-679-11	SWITCH, LEAF (MOTOR ON/OFF)	
SP901	1-505-531-11	SPEAKER (10cm) (L-CH)	
SP902	1-505-531-11	SPEAKER (10cm) (R-CH)	
⚠T901	1-429-101-11	TRANSFORMER, POWER	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
⚠	1-690-952-11	CORD, POWER	
	3-859-117-11	MANUAL,INSTRUCTION (ENGLISH) (US,CND)	
	3-859-117-21	MANUAL,INSTRUCTION (FRENCH) (CND)	
	8-719-591-90	REMOTE CONTROLLER (RMT-CV30)	
	4-991-047-XX	LID, BATTERY CASE (FOR RMT-CV30)	
**********			

****
HARDWARE LIST
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#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S
#2	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S
#3	7-682-548-04	SCREW +B 3X8
#4	7-621-770-XX	SCREW +P 2.6X8
#5	7-621-255-15	SCREW +P 2X3
#6	7-685-648-79	SCREW +BVTP 3X12 TYPE2 N-S

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.